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A
H I S T O R Y
O F
P L A N T S.

By JOHN HILL, M.D.
Acad. Reg. Scient. Burdig. &c. Soc.

76.

A GENERAL
NATURAL HISTORY:

O R,
NEW and ACCURATE
DESCRIPTIONS
OF THE
Animals, Vegetables, and Minerals
Of the VARIOUS
PARTS of the WORLD;

WITH
Their VIRTUES, and USES, in MEDICINE and
MECHANICS:

ILLUSTRATED

By a GENERAL REVIEW of the Knowledge of the Ancients; and the
Improvements and Discoveries of later Ages in these Studies.

WITH
A GREAT NUMBER OF FIGURES, ELEGANTLY ENGRAVED.

By JOHN HILL, M.D.

MEMBER of the IMPERIAL ACADEMY, of the ACADEMY of FENNES and BOURDEAUX, &c. &c.



ENLARGED WITH ADDITIONAL PLATES.

L O N D O N:

Printed for the AUTHOR in St. James's Street.

M.DCC.LXXIII.

C O N T E N T S of the V O L U M E S.

V O L. I. The History of **F O S S I L S.**

V O L. II. The History of **P L A N T S.**

V O L. III. The History of **A N I M A L S.**

Each being in itself a compleat History of One of the Three great
Classes of Natural Bodies.

T H E

P R E F A C E.

THE former volume of this *Work*, containing the *History of Fossils*, has fallen under the censure of some people, who have had less acquaintance with the learned languages, than seems necessary to the reading on any of the improved Sciences, on account of the many new generical terms contained in it, and formed out of the Greek: others have also objected to it, as too much out of the usual manner of writing on the subject; too unlike all the other treatises on the mineral or fossile kingdom.

I could wish to make a work of this kind of general use, and to obviate, as much as possible, even injudicious or unfair objections. What I have to plead, in justification of the former volume, is short: That all new systems must have the assistance of new words; that not only reason, but custom, time immemorial, has established it as a law, that these are to be derived from the Greek; and that no author had written what could be called a *History of Fossils* before.

In regard to the subject of this volume, it is much otherwise: Botany has been, in a great measure, reduced into a system already by Linnaeus; and generical names are established, in the greater part of it, expressive of the necessary distinctions. In the distributions and characters of what are called the imperfect plants, Linnaeus, and indeed all who have written on the subject, appear to me to be greatly defective: so much of this *Work*, therefore, as regards these, will, I am afraid, be liable to the same objections with the former volumes; but in all the rest I have everywhere retained the already established names; I have kept up to the arrangement of the plants in the Linnaean system, the author of which deserves infinite praise; and have preserved his classical as well as his generical names, his classical characters, and, so far as nature warrants it, have kept up to even his very terms in the generical distinctions. I have always, where it has been possible, examined the plants themselves, in the time of their flowering: where they have agreed with his characters, I have never failed to adopt them; and, even where they have differed from his descriptions, I have given the account, in terms as like his own as might be.

Where some of his generical characters have contradicted a part of the classical ones, I have reconciled them; and, where some new discovered, or before not accurately examined, species has deviated from a part of the established distinction of the genus, I have made no scruple of making that conform to nature. Of this kind will be found all the variations made, in this Work, from that excellent Writer's method; for the rest, every one who understands him, or any of the botanists of reputation, who have written since the establishment of his method, will meet with no difficulties in this point.

This, however, regards only the more abstruse and dry part of the Work: the descriptions of plants, which are all the generality of the world regards, have never fallen in his way.

The difficulty of comprising a General History of Plants, in the compass of so small a volume as this was engaged to be, must have appeared very great to every one, who is at all acquainted with the nature of the subject. The method by which it has been executed is no other, than the cautious avoiding of repetitions, and the necessary reduction of the supposed number of species.

As to the first article, the classical and generical characters of a plant are always understood to make a part of the description of the species; and these are so considerable a part, that little more is in reality necessary to be added to them, than the size of the plant, and of it's several parts; the form of the leaves, and the colour of the flowers. After succinct descriptions of this kind, of three or four species of each genus, and those as distinct and different in their general form as could be chosen, the others can hardly be mistaken on a bare recital of their names, which always convey their principal, or more obvious, distinctions. I could have wished to have made the names, under which I have mentioned these legitimately specific ones, as has been done in regard to those which are described, and where a synonymon of another author is given; but, where one name only could be given, it was necessary to give that by which the plant is now known in our own fields or gardens.

The number of plants, as they stand in the generality of authors, is not less than sixteen thousand; but this has been, in great part, owing to the common error of mistaking varieties for species: I have, by separating these, so far as I could with any degree of certainty, reduced the number of known plants to little more than eleven thousand; and I am well assured, that future observation will yet very considerably lessen that number.

I have supposed the reader less acquainted with botany at his first entering on this work, and have therefore been more large and express, both in the characters and descriptions of the subjects; as he becomes more accustomed

customed to the terms, and familiarised to the distinctions of plants, he will find the characters more succinēt, and the descriptions shorter.

The plates, though of a very limited number, will be found to contain every thing necessary to the understanding botany, as a science: the three or four first explain to the eye all the terms used in the course of the Work; and in the others there will be found one plant of every class, and a number of the flowers of the more singular among the other genera comprised under it. The descriptions are to be brought in to the assistance of these, as the characters are to that of the descriptions; and in this method, every part of the Work being subservient to every other part of it, I am not afraid to assert, that it will so far answer it's purposed end, that a man of judgment, who has not studied botany before, will, by means of it alone, without the assistance of any other work, be able to find the class, genus, and species of any plant he meets with in a perfect state, and to call it by it's proper name.

*Less than this I should be sorry to have arrived at; more I would not be ambitious*of doing, in a volume of this size.*



A GENERAL TABLE of BOTANY,

IN WHICH

All the GENERA are arranged under their Classes, Orders, and Divisions, as they follow one another in this History.

PART I.

O *F those usually called imperfect plants.*

BOOK I.

SUEMARINES.

1. *Those which are of a fleshy hardness.*

Mycetium
Asteria
Madrepore
Eichara
Tubularia
Acetabulum
Ormus
Corallum
Corallina
Alcyonium.

2. *Those of a firm, tough, and elastic texture.*

Campylum
Spongia
Fucus
Strongylium.

3. *Of a tender, herbaceous structure.*

Alga.

BOOK II.

FUNGI.

1. *Those which grow horizontally.*

Agaricus
Poria
Odontia
Amphitretia.

2. *Those which grow erect, and have beads.*

Lepiota
Solenia
Porium

Acontia
Leotia
Didyaria.

3. *Those which grow erect, and have no beads.*

Clethria
Arcyria
Lycoperdon
Carpobolus
Cyathia
Encelia
Clavaria
Merisma
Xylaria
Acidium
Ceratosperrum
Ifaria
Phylarum
Monilia.

4. *Those which grow under the surface of the earth.*

Tuber.

BOOK III.

MOSES.

1. *Those which consist of tender filaments.*

Byssus
Conserva.

2. *Those which are of a foliaceous, or a gelatinous matter.*

Phyllona
Ulva
Collema.

3. *Those consisting of firm or rigid stalks.*

Ufnea
Platyfma
Cladonia
Pyxidium.

4. *Those consisting of a crustaceous, dry, or gelatinous matter.*

Placodium.

5. *Those which produce capsules covered with opercula.*

Brynm
Polytrichum
Sphagnum
Mnium
Fontinalis
Hypnum.

6. *Those which produce capsules without calyptra.*

Lycopodium
Trispermium.
Selago
Polycocca.
Opoca.

PART II.

Plants approaching to what are called the more perfect ones, but with scarce distinguishable fructifications.

CRYPTOGAMIA.

Salvinia
Lemna
Chara
Equisetum
Ficus
Ophioglossum
Osmunda
Pteris
Lonchitis
Adiantum
Asplenium
Hernionitis
Polypodium
Trichomanes.

PART III.

Plants called the more perfect ones.

MONANDRIA.

1. Such as have only one style.

1. Those which have trilobular fruits.

Canna
Amomum
Costus
Alpinia
Maranta
Curcuma
Kampferia.

2. Those which have single seeds.

Boerhaavia
Hippuris
Salicornia.

3. Such as have two styles.

Corispermum
Callitriche
Blitum.

DIANDRIA.

1. Such as have only a single style.

1. Those with regular corolla.

Nyctanthes
Jasminum
Ligustrum
Phyllirea
Olea
Chionanthus
Syringa
Eranthemum
Circæa.

2. Those with irregular corolla, and the seeds in capsules.

Veronica
Paderota
Justicia
Gratiola
Pinguicula
Utricularia.

3. Those with irregular corolla, and naked seeds.

Verbena
Lycopus
Amethystea
Ziziphora
Dianthera
Salvia
Rosmarinus
Monarda
Collinsonia
Morina.

2. Such as have two styles.

Buffonia
Anthoxanthum.

3. Such as have three styles.

Piper.

TRIANDRIA.

1. Such as have only one style.

1. Those whose flowers have no amentum or spathe.

Valeriana
Cneorum
Hirtella
Olax
Tamarindus.
Melotheia
Polycnemum.

2. Those with spathaceous flowers, and trilobular capsules.

Crocus
Ixia
Gladiolus
Antholyza
Iris
Commelina
Xyris.

3. Those with an imbricated amentum, and naked seeds.

Schoenus
Cyperus
Scirpus
Eriophorum.

2. Such as have two styles.

1. Those with uniflorous cups.

Bobartia

Cornucopie
Nardus
Saccharum
Phalaris
Phleum
Alopecurus
Panicum
Milium
Agrostis
Lagurus
Dactylis.

2. Those with multiflorous cups.

Melica
Aira
Poa
Briza
Uniola
Cynosurus
Beomus
Festuca
Avena
Arundo
Lolium
Triticum
Secale
Hordeum
Elymus.

3. Such as have three styles.

Eriocaulon
Proserpinaca
Montia
Alfine
Tiltea
Mollugo.

TETRANDRIA.

1. Such as have only one style.

1. Those with many flowers in a common calyx, and the seeds naked and single.

Leucodendron
Protea
Cephalanthus
Globularia
Dipacus
Scabiosa
Knautia.

2. Those with monopetalous flowers, on a didymous fruit, the style bifid.

Asperula
Sherardia

Spermacoce

Spermatocoe
Hedyotis
Knoxia
Diodia
Crucianella
Houstonia
Gallium
Rubi.

3. *Such as have four styles.*

Ilex
Ruppia
Potamogeton
Sagina
Caldenia.

PENTANDRIA.

3. *Those with monopetalous flowers, not distinguished by the peculiar characters of the former.*

Siphonanthus
Catebaza
Ixora
Pavetta
Avicennia
Callicarpa
Penaea
Blazia
Polypremum
Exacum
Buddlea
Plantago
Scoparia
Centunculus
Sanguisorba
Cissus.

4. *Those with complete tetrapetalous corollae.*

Epimedium
Cornus
Enonymus
Tomex
Ptelea
Ludwigia
Oldenlandia
Amanzia
Trapa.

5. *Those with incomplete tetrapetalous corollae.*

Dorstenia
Isnarda
Elaeagnus
Brabejum
Camphorosma
Rivina
Alchemilla.

2. *Such as have two styles.*

Apbanes
Hammelia
Cuscuta
Hypecoum.

1. *Such as have only one style.*

1. *Those with monopetalous flowers, succeeded by four naked seeds.*

Heliotropium
Myofotis
Lithospermum
Anchusa
Cynoglossum
Symphytum
Pulmonaria
Borrago
Lycopsis
Echium
Asperugo
Cerinthe
Tournefortia.

2. *Those with monopetalous flowers, and capsules within them.*

Androsace
Primula
Cortusa
Cyclamen
Soldanella
Menyanthes
Hottonia
Lyfimachia
Anagallis
Diapensia
Hydrophyllum
Theophrasta
Patagonnola
Spigelia
Azalea
Ophiorrhiza
Plumbago
Phlox
Convolvulus
Ipomoea
Polymonium.

3. *Those with monopetalous flowers, and the germen situate underneath them.*

Campanula
Roelia

Phyteuma
Trachelium
Samolus
Rondeletia
Chomelia
Bellonia
Genipa
Cinchona
Coffea
Morinda
Conocarpus
Diervilla
Lonocera
Mussaenda.

4. *Those with declinated stamina.*

Mirabilis
Datura
Hyoscyamus
Nicotiana
Atropa
Mandragora
Verbascum
Coris.

5. *Those with a berry above the receptacle.*

Rhamnus
Chrysophyllum
Sideroxylum
Lycium
Cestrum
Philyca
Chironia
Brunfelsia
Myrsine
Strychnus
Capsicum
Solanum
Physalis.

6. *Those with polypetalous flowers.*

Gronovia
Hedera
Vitis
Ribes
Cupanea
Itea
Celastrus
Ceanothus
Diosma
Lagocchia
Brunia
Chaymnia
Celosia.

7. *Those*

7. *Those with incomplete flowers.*
 Achyranthes
 Thesium
 Glaux
 Illecebrum.
8. *Those with the lobes of the corolla bent obliquely to the right.*
 Cerbera
 Rauwolfia
 Thevetia
 Vinca
 Nerium
 Plumeria
 Cameraria
 Tabernaemontana
 Ceropegia.
2. *Such as have two styles.*
1. *Those with the lobes of the corolla bent obliquely to the right.*
 Stapelia
 Asclepias
 Periploca
 Cynanchum
 Apocynum.
2. *Those with a single seed after every flower.*
 Herniaria
 Salsola
 Gomphrena
 Chenopodium
 Beta
 Ulmus
 Bofea
 Caesla.
3. *Those with numerous seeds.*
 Nama
 Mitreola
 Huchera
 Gentiana
 Swertia.
4. *Those with two naked seeds and a simple umbel.*
 Phyllis
 Panax
 Eryngium
 Hydrocotyle.
5. *Those with two naked seeds and an universal and partial involucre.*
 Sanicula
 Astrantia
 Bupleurum
 Echinophora
 Tordylium
 Caulalis
 Arteria
 Daucus
 Ammi
 Bunium
 Conium
 Selinum
 Athamanta
 Peucedanum
 Crithmum
 Cachrys
 Ferula
 Laserpitium
 Heracleum
 Ligusticum
 Angelica
 Sium
 Bubon
 Cuminum
 Sison
 Oenanthe.
6. *Those with two naked seeds, and only a partial involucre.*
 Phellandrium
 Cicuta
 Ethusa
 Coriandrum
 Scandix
 Cherophyllum
 Sefeli
 Imperatoria.
7. *Those with two naked seeds and no involucre.*
 Thapsia
 Pastinacha
 Smyrniolum
 Anethum
 Carum
 Pimpinella
 Anisum
 Apium
 Ægopodium.
3. *Such as have three styles.*
 Rhus
 Cotinus
 Cassine
 Maurocenia
- Viburnum
 Tinus
 Opulus
 Sambucus
 Tamarix
 Staphylea
 Turnera
 Telephium
 Corrigiola
 Holosteum
 Bafella.
4. *Such as have four styles.*
 Parnassia.
5. *Such as have five styles.*
 Arabia
 Barreria
 Statice
 Linum
 Drosera
 Crassula
 Suriana
 Sibbaldia.
6. *Such as have numerous styles.*
 Myoforus.
- HEXANDRIA.
1. *Such as have only one style.*
1. *Those with trifid, calyculate corollae.*
 Bromelia
 Tillandsia
 Renealmia
 Burmannia
 Tradescantia.
2. *Those with monophyllous spathe.*
 Galanthus
 Leucoium
 Narcissus
 Paneratrium
 Amaryllis
 Pontederia.
3. *Those with naked, hexapetalous flowers.*
 Crinum
 Bulbocodium
 Allium
 Lilium
 Fritillaria

| | | |
|--|----------------------------------|-----------------------------------|
| Pritillaria | Eiculus. | Rheum. |
| Tulipa | | |
| Erythronium | OCTANDRIA. | 3. Such as have six styles. |
| Uvularia | | Butomus. |
| Gloriosa | 1. Such as have only one style. | |
| Alphodelus | | DECANDRIA. |
| Anthericum | Tropaeolum | |
| Scilla | Acer | 1. Such as have only one style. |
| Orinthogalum | Dodonaea | |
| Asparagus | Grislea | 1. Those with declinated flamina. |
| Leontice. | Allophyllus | |
| | Jambolifera | Sophora |
| 4. Those with naked, monopetalous flowers. | Mimusops | Cereis |
| | Lawsonia | Bauhinia |
| Convallaria | Rhexia | Parkinsonia |
| Hyacinthus | Oenothera | Cassia |
| Polyanthus | Epilobium | Poinciana |
| Aloe | Erica | Cælipinia |
| Yucca | Daphne | Gullandina |
| Agave | Gnidia | Guaiacum |
| Hemerocallis. | Lachnra | Cynomeira |
| | Passerina | Anacardium |
| 5. Those with cups to the flowers, but the corolla not trifid. | Stellera | Dictamnus. |
| | Santalum | |
| | Memecylum | 2. Those with erect flamina. |
| | Vaccinium | |
| | Diolpyros. | Toluifera |
| Acorus | | Monotropa |
| Hazmanthus | 2. Such as have two styles. | Zygophyllum |
| Aphyllanthes | | Adenanthra |
| Flagellaria | Moerhingia. | Hæmatoxyllum |
| Juncus | Chrysofplenium | Melia |
| Richardia | Galenia. | Ruta |
| Berberis | | Fagonia |
| Cordia | 3. Such as have three styles. | Tribulus |
| Prinos | | Jussia |
| Loranthus | Polygonum | Frankenia |
| Peplis. | Perficaria | Clethra |
| | Biftorta | Pyrola |
| 2. Such as have two styles in the flower. | Helxine | Audromeda |
| | Paulinia | Arbutus |
| Rumex | Cardiospermum | Ledum |
| Scheukzeria | Sapindus. | Melastoma |
| Triglochin | | Bartramia |
| Colechieum | 4. Such as have four styles. | Schinus. |
| Melanthium | | |
| Medeola | Paris | |
| Menispermum | Adoxa | |
| Saururus. | Elatine. | |
| | | 2. Such as have two styles. |
| 3. Such as have four styles. | 5. Such as have numerous styles. | Dianthus |
| Petivera. | Michelia. | Saponaria |
| | | Scleranthus |
| 4. Such as have numerous styles. | | Mitella |
| Alisma. | ENNEANDRIA. | Saxifraga |
| | | Hydrangea |
| HEPTANDRIA. | | Royena. |
| These have only one style. | 1. Such as have only one style. | |
| Trientalis | Laurus. | 3. Such as have three styles. |
| | | Malpighia |
| | 2. Such as have three styles. | Bannisteria |
| | Spondias | Triopteris |

- Triopteris
 Garidella
 Cherleria
 Drypis
 Cucubalus
 Silene
 Stellularia
 Arenaria.
4. *Such as have five styles.*
- Spergula
 Cerastium
 Agrostemma
 Coronaria
 Lychnis
 Avernho
 Oxalis
 Cotyledon
 Sedum
 Penthorum.
5. *Such as have ten styles.*
- Phytolacca
 Neurada.
- DODECANDRIA.**
1. *Such as have only one file.*
- Gethyllis
 Asarum
 Rhizophora
 Lythrum.
2. *Such as have two styles.*
- Agrimonia.
3. *Such as have numerous styles.*
- Sempervivum.
- ICOSANDRIA.**
1. *Such as have only one style.*
- Cactus
 Philadelphus
 Eugenia
 Pfidium
 Punica
 Myrtus
 Garcinia
 Amygdalus
 Prunus
 Cerasus
 Padus
 Styrax
 Samyda
2. *Such as have two styles.*
- Cratægus.
3. *Such as have three styles.*
- Sorbus.
4. *Such as have four styles.*
- Tetragonia.
5. *Such as have five styles.*
- Aizoon
 Mefembryanthemum
 Mefpilus
 Pyrus
 Spiræa
 Filipendula.
6. *Those which have numerous styles.*
- Rofa
 Rubus
 Fragaria
 Potentilla
 Tormentilla
 Comarum
 Geum
 Dryas.
- POLYANDRIA.**
1. *Such as have only one style.*
1. *Those in which the style is scarce conspicuous.*
- Marcgravia
 Morilonia
 Breynia
 Crataeva
 Capparis
 Cambogia
 Aftæa
 Bocconia
 Chelidonium
 Papaver
 Argemone
 Saracena
 Clusia
 Muntingia
 Sanguinaria
 Podophyllum
 Nymphaea.
2. *Those which have the style elongated.*
- Delima
 Sloanea
 Xylon
- Mimofa
 Caryophyllus
 Meina
 Mammea
 Calophyllum
 Euphorbia
 Triumphetta
 Peganum
 Elæocarpus
 Microcos
 Mentzelia
 Ochina
 Ciftus
 Corchorus
 Sauvagia
 Tilia
 Vateria
 Chryfobalanus
 Plinia
 Portulaca
 Anacampferos
 Thea
 Bixa.
2. *Such as have two styles.*
- Heliocarpus
 Præonia
 Caligonum.
3. *Such as have three styles.*
- Rhefida
 Delphinium
 Aconitum.
4. *Such as have four styles.*
- Tetracera.
5. *Such as have five styles.*
- Aquilegia
 Nigella.
6. *Such as have six styles.*
- Stratiotes.
7. *Such as have numerous styles.*
- Dillenia
 Liriodendrum
 Magnolia
 Uvaria
 Anona
 Hepatica
 Pulfatilla
 Anemone
 Atragene
 Clematis
 Thalictrum

Adonis
Ranunculus
Ioppyrum
Helleborus
Caltha.

DIDYNAMIA.

1. Such as have naked seeds.

1. Those with the calyx divided into five subequal segments.

Teucrium
Satureia
Lavandula
Hyssopus
Nepeta
Botanica
Sideritis
Mentha
Glechoma
Orvala
Ajuga
Lamium
Galeopsis
Stachys
Ballota
Marrubium
Leonurus
Phlomis
Moluccella.

2. Those with a bilabiated calyx.

Ocimum
Trichostema
Thymus
Melissa
Clinopodium
Origanum
Dracocephalum
Horminum
Melitis
Cunila
Brunella
Scutellaria
Prasium.

2. Such as have the seeds contained in capsules.

1. Those with the stigma simple, and the corolla perforated.

Bartia
Rhinanthus
Euphrasia
Melampyrum

Lathraea
Phelppea
Squammaria
Swalbea
Pedicularis
Tozzia
Chelone
Gefneria
Gerardia
Antirrhinum
Cymbaria.

2. Those which have the stigma simple, and the corolla patulous.

Linnaea
Craniolaria
Ægineta
Hebenstretia
Crescentia
Halleria
Lantana
Gmelina
Loefelia
Selago
Petraea
Celsia
Capraria
Digitalis
Bignonia
Citharexylon
Martinia
Scrophularia
Belleria
Cornutia
Browallia
Erinus
Buchnera
Limofolia.

3. Such as have the stigma double.

Obolaria
Orobanchæ
Lippia
Mimulus
Bontia
Sesuvium
Dodartia
Ruella
Barleria
Ovieda
Columnnea
Clerodendrum
Volcaneria
Vitex
Acanthus.

4. Those with polypetalous corolla.

Melanthus.

TETRADYNAMIA.

1. Those with filiculate capsules.

Myagrurn
Anfatica
Subularia
Lepidum
Cochlearia
Thlaspi
Iberis
Biscutella
Clypeola
Alyssum
Lunaria
Draba
Vella.

2. Those with siliquose capsules.

Boniss
Cheiranthus
Hesperis
Raphanus
Dentaria
Cardamine
Brassica
Sinapis
Arabis
Erysimum
Turritis
Sisymbrium
Crambe
Isatis
Cleome.

MONADELPHIA.

1. Such as have four stamina.

Waltheria
Hermannia
Melocheia.

2. Such as have ten stamina.

Hugonia
Connarus
Geranium.

3. Such as have a great number of stamina.

Pentapetes
Stewartia
Sida
Napaea
Lavatera
Malva
Gossypium
Malope

Urena

Urena
Alcea
Althæa
Hibiscus
Trionum
Camellia.

DIADELPHIA.

1. Such as have six stamina.

Fumaria.

2. Such as have eight stamina.

Polygala
Heisteria.

3. Such as have ten stamina.

1. Those with all the filaments connected at the base.

Erythrina
Securidaca
Lupinus
Crotalaria
Genista
Spartium
Barbonia
Achyronia
Ononis
Galega
Anthyllis
Amorpha.

2. Those with pubescent stigmata.

Anagris
Robinia
Orobis
Lathyrus
Pisum
Vicia
Colutea
Dolichos
Phaseolus.

3. Those with bilabiated calyxes.

Ulex
Cytisus
Glycine
Arrhacis
Glycyrrhiza
Æschynomone
Coronilla.

4. Those with the stigma simple.

Cicer
Ervum
Astragalus
Biserrula
Tragacantha
Phaca
Hedysarum
Ornithopus
Scorpiurus
Hippocrepis
Medicago
Trigonella
Tribolium
Lotus
Dorycnium
Pteralea
Clitoria
Indigofera
Dacca.

POLYADELPHIA.

1. Such as have five stamina.

Theobroma.

2. POLYADELPHIA ICOSANDRIA.

Citrus.

3. POLYADELPHIA POLYANDRIA.

Ascyrum
Hypericum.

SYNGENESIA.

1. POLYGAMIA ÆQUALIS.

1. Those with planipetalous corollule.

Tragopogon
Prenanthes
Chondrilla
Crepis
Hyoferis
Lapsana
Lactuca
Hierachium
Picris
Scorzonera
Leontadon
Sonchus
Hypochaeris
Catananche

Scolymus
Cichorium
Andryala
Elephantopus.

2. Those with tubipetalous corollule.

Echinops
Gundelia
Arctium
Serratula
Onopordon
Carduus
Cinara
Carlina
Calthamus
Cnicus
Atractylis
Stæbe
Stœbelina
Bidens
Santolina
Tarchonanthus
Tanacetum
Ageratum
Chrysocoma
Kleinia
Eupatorium.

2. SYNGENESIA POLYGAMIA SUPERFLUA.

1. Those with stœbulous flowers.

Artemisia
Gnaphalium
Xeranthemum
Carpesium
Baccharis
Conyza.

2. Those with radiated flowers.

Erigeron
Solidago
Aster
Musa
Senecio
Tussilago
Doronicum
Gerbera
Helenia
Tagetes
Cotula
Bellis
Chrysanthemum
Matricaria
Anthemis
Achillea

Buphthalmum

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|--------------------------------|-----------------------------------|-----------------------------------|
| Baphthalmum | 4. Such as have five flamina. | 4. Such as have six flamina. |
| Anacyclus | | |
| Verbesina | Passiflora. | Zizania. |
| Sigesbeckia | | |
| Tetragonotheca | 5. Such as have six flamina. | 5. Such as have numerous flamina. |
| Tridax. | | |
| 3. POLYGAMIA FRUSTRANEA. | Aristolochia | Poterium |
| | Pistia. | Sagittaria |
| Helianthus. | 6. Such as have ten flamina. | Myriophyllum |
| Rudbeckia | | Ceratophyllum |
| Coreopsis | Helicteres. | Quercus |
| Centaurea. | | Juglans |
| | | Fagus |
| 4. POLYGAMIA NECESSARIA. | 7. Such as have numerous flamina. | Corylus |
| | | Carpinus |
| Silphium | Grewia | Platanus |
| Chrysogonum | Calla | Liquidambar. |
| Melampodium | Arum | 2. MONOECIA MONADELPHIA. |
| Micropus | Dracontium | |
| Eriocephalus | Pothos | Pinus |
| Aretotis | Zostera. | Abies |
| Osteospermum | | Cupressus |
| Calendula | MONOECIA. | Thuja |
| Othonna | | Theligonum |
| Spharanthus | 1. Such as have only one flamen. | Acalypha |
| Milleria. | | Croton |
| 5. POLYGAMIA MONOGAMIA. | Ceratocarpus | Ricinus |
| | Zanichellia | Jatropha |
| Corymbium | Cynomorium. | Sterculia |
| Jasione | | Hura. |
| Lobelia | 2. Such as have three flamina. | 3. MONOECIA SYNGENESIA. |
| Viola | | |
| Impatiens. | Zea | Trichosanthes |
| | Coix | Momordica |
| GYNANDRIA. | Carex | Cucumis |
| | Sparganium | Cucurbita |
| 1. Such as have two flamina. | Typba | Sicyos |
| | Phyllanthus | Bryonia |
| Orchis | Tragia | Trevilea. |
| Satyrium | Axyris. | |
| Serapias | 3. Such as have four flamina. | 4. MONOECIA GYNANDRIA. |
| Herminium | | Andrachne. |
| Neotia | Urtica | |
| Ophris | Buxus | DIOECIA. |
| Limodorum | Alnus | |
| Cypripedium | Betula. | 1. Such as have only one flamen. |
| Epidendrum. | | Najas. |
| 2. Such as have three flamina. | 4. Such as have five flamina. | |
| Silyrinchium. | Xanthium | 2. Such as have two flamina. |
| | Ambrosia | Vallisneria |
| 3. Such as have four flamina. | Parthenium | Salix. |
| | Iva | |
| Nepenthes. | Amaranthus. | 3. Such |

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| 3. <i>Such as have three flamina.</i> | Populus. | Rufcus. |
| Ostrya. | 8. <i>Such as have nine flamina.</i> | 14. DIOECIA GYNANDRIA. |
| 4. <i>Such as have four flamina.</i> | Mercurialis Hydrocharis. | Clusia. |
| Viscum Hippophae Myrica Morus. | 9. <i>Such as have ten flamina.</i> | POLYGAMIA. |
| 5. <i>Such as have five flamina.</i> | Coriaria Nyssa Carica Kiggelaria Datisca. | 1. POLYGAMIA MONOECIA. |
| Antidesma Pisonia Pistachia Ceratonia Spinachia Cannabis Humulus Zanonia. | 10. DIOECIA ICOSANDRIA. | Musa Ophioxylum Veratrum Celtis Holcus Aegilops Cenchrus Valantia Parietaria Atriplex. |
| 6. <i>Such as have six flamina.</i> | Aruncus. | 2. POLYGAMIA DIOECIA. |
| Gleditsia Smilax Tamus Rajana Dioscorea. | 11. DIOECIA POLYANDRIA. | Chamærops Fraxinus Rhodiola Anthospermum Arctopus. |
| 7. <i>Such as have eight flamina.</i> | Cliffortia. | 3. POLYGAMIA TRI- OECIA. |
| | 12. DIOECIA MONADELPHIA. | Empetrum. |
| | Juniperus Taxus Ephedra. | |
| | 13. DIOECIA SYNGESIA. | |



Explanation

Explanation of the TERMS used in the Descriptions of the Flowers and Fruits of Plants.

CALYX is a general term expressing the cup of a flower: the part of a plant which furrounds, incloses, or supports the other parts of the flower.

The cups of flowers are very various in their structure, and are distinguished by the several names of, 1. Perianthium. 2. Involucrum. 3. Spatha. 4. Gluma.

1. *Perianthium* expresses that sort of cup of a flower, which either consists of several leaves, or else of one leaf divided into several segments, and furrounds the lower part of the flower.

2. *Involucrum* expresses that sort of cup which furrounds a number of flowers together, every one of which has, beside this general cup, it's own particular perianthium. The involucrum consists of a multitude of little leaves, disposed in a radiated manner.

3. *Spatha* expresses that sort of cup which consists of a simple membrane, growing from the stalk. This kind of cup is of various figures, often diphylous, or divided into two parts; often simple, sometimes more divided: it incloses sometimes a single flower, sometimes several together, and these have often no perianthium. The spatha is of very different texture and consistence in different plants.

4. *Gluma*. The glume is a species of cup, consist^{ing} of two or three membranous valves, which are often pellucid at their edges. This kind of cup belongs to the grasses.

The *Corolla* is the most conspicuous part of a flower; it expresses the coloured, tender part which furrounds the organs of generation. The parts it is composed of are called *petals*: if it consists only of one piece, it is called *monopetalous*; if of more, it is said to be *dipetalous*, *tripetalous*, *tetrapetalous*, and so on, as it consists of two, three, or four, or more parts.

Petal expresses the part of a flower which constitutes the corolla; this generally distinguishes itself by it's singular colour. When the corolla consists of only one petal, it's lower tubular part is called the *tube*; it's upper expanded part, the *limb*: when several petals go to make up the flower, the narrow part, where they are inserted, is called *unguis*; their broader part, toward the end, *bractea*.

Nectarium expresses what is sometimes only a part of the corolla, sometimes, though more rarely, the whole. It is a part destined for the reception of the honey juice of the plant, and is very various in it's figure. Sometimes it is only a hollow in a petal; sometimes it is a little squamma, sometimes a tubercle, and sometimes a plain tube.

Corollula is used to express those little, partial flowers, which together constitute the whole of the compound ones. These are of two kinds, the tubular and ligulate: the tubulated corollulae are always furnished with a campanulated limb, divided into four or five segments. The ligulated corollula has only a flat, linear limb, terminated by a single point, or by a broader extremity, divided into three or five segments.

Stamina expresses the male organs of generation in flowers: these consist of two parts, a filament and an anther, though sometimes the anther stands alone.

The *Filament* is a slender body, supporting a tumid one, which is the anthera on it's head.

The *Anthera* is the principal male organ of generation; it is a small tumid body, affixed on the top of the filament, and is hollow, and contains in it a fine powder, called the *farina*.

Pistil expresses the female organ of generation in flowers; it is composed of three parts, the germen, the style, and the stigma.

The *Germen* expresses a part which supplies the office of an uterus in plants. It is of various shapes, but is always situated at the bottom of the pistil, and contains the embryo seeds.

The *Style* is a part of various figure also, but it is always placed on the germen, and gives origin to the styles; in some plants this is extremely short, in others it seems entirely wanting.

The *Stigma* is also of various figures; it's place, however, is certain: it stands on the top of the style, and, if there is no style, on the top of the germen.

Calyptra expresses a thin membranaceous involucre, usually of a conic figure, which covers the parts of fructification. The capsules of most of the mosses have calyptre.

Pericarpium expresses a covering or case made for the seeds of plants. It is the germ of the pistil enlarged. There are no less than nine species of pericarpia. 1. A capsule. 2. A conceptaculum. 3. A pod. 4. A legumen. 5. A nut. 6. A drupe. 7. An apple. 8. A berry. 9. A strobilus.

1. *Capsule* expresses a pericarpium, composed of several dry, elastic valves, which usually burst open at the points. This kind of pericarpium sometimes contains only one cell or cavity, sometimes more: in the first case, it is called unilocular; in the second, bilocular trilocular or multilocular, according to the number of cells in it, made for the reception of the seeds.

2. *Conceptaculum*. This expresses a kind of pericarpium, composed of soft and less rigid valves, and containing only one cavity.

3. *Pod*. This term expresses a pericarpium, consisting of two valves, which open from the base to the point, and are separated by a membranaceous partition, from which the seeds hang by a kind of funiculus umbilicalis.

4. *Legume* expresses a pericarpium of an oblong, compressed figure, formed of two valves; joined by a visible suture, both on the upper and under parts, and having the seeds affixed to the upper limb of the two valves, in an alternate order.

5. *Nut*. This term expresses a pericarpium of an extraordinary hardness.

6. *Drupe*. This term expresses a pericarpium, consisting of a soft, fleshy, and succulent pulp, in the center of which there is a nucleus.

7. *Apple*. By this term is expressed a pericarpium, consisting of a solid, fleshy pulp, in the middle of which there are seeds inclosed in membranaceous coverings.

8. *Berry*. By this is expressed a fruit, containing a number of naked seeds, in the midst of a succulent pulp.

9. *Strobilus* expresses a pericarpium, formed of a number of vaginæ, with contorted points applied close to one another.

Receptaculum expresses that part of a plant, to which the flower or the fruit adheres; this is a part of a very various figure in the various genera.

Corona expresses any thing growing on the head of a seed. The coronæ of seeds are of various kinds; they are sometimes simple, consisting only of a dentated membrane; sometimes pappose, consisting of downy matter. The downy matter, in some cases, is immediately affixed to the seed; in others it has a pedicle growing from it; and it sometimes is composed of simple filaments, sometimes it is ramose.

Amentum expresses what we generally call a *Catkin*. It is a cluster of flowers only of one sex affixed to an axis. In some cases there are squammæ on the axis, which do the office of cups; in others, the flowers are naked.

Volva. A membranous matter, surrounding the bases of many of the fungi, and in many of them of a very singular figure and structure.

Terms used in the description of Roots.

Bulbous expresses a root of a round, or roundish, figure, and usually furnished with fibres at it's base. The terms used in describing bulbous roots are, 1. *Solid*, which expresses the whole root to be one uniform lump of matter. 2. *Tunicated*; this expresses such bulbs as are formed of multitudes of coats surrounding one another. 3. *Squammose*, expressing such as are composed of, or covered with lesser flakes. 4. *Duplicate*, expressing such as are composed of two; and, 5. *Aggregate*, such as are composed of several smaller roots.

Tuberosus expresses a root large and fleshy, thicker than the stalk of the plant, of an irregular figure, and wanting the characters of the *bulbous*. When the tuberos roots adhere immediately to the base of the stalk, they are called *sessile*; when they are fixed to the ends of fibres, *pendulous*.

Fibrous expresses a root, consisting of one, or more, slender bodied, oblong, and less thick than the stalk of the plant. When a fibrous root penetrates straight into the ground, it is called *perpendicular*; when it creeps under the surface, *horizontal*; when somewhat thick, it is called *fleshy*; when very thin, *capillary*; when it runs all the way undivided, *simple*; when divided, or when it sends off smaller roots, *branched*; when it's surface is covered with extremely short and fine fibres, *hairy*.

Terms

Terms used in describing the Stalks of plants.

Stalk. By this we express that part of a plant, which rises immediately from the root, and which usually supports the leaves, the flowers, and the fruit. The term *Stalk* is used, on most occasions; but, in speaking of the grasses and gramineous plants, the word *culm* is used in it's place, to distinguish that peculiar kind of stalk which is general to all these plants, and is not found in any others.

The terms used in describing the stalk of a plant are, 1. *Simple*; by this we understand a stalk which runs up undivided from the root to the top. This is called *naked*, when it has no leaves; when it has leaves on it, *foliifer*; when it sends out branches, *ramosif*. If it rises strait up, it is called *erect*; if slanting, *oblique*; if it twist round other things, *voluble*; if it bend, *flexuous*; if it floops toward the ground, *reclinate*; if it lie on the ground, *procumbent*; if it emit roots, as it runs along, *creeping* and *sarmentous*.

If the stalk be rounded in shape, it is called *round*; if it make two angles, *ancipital*; if three, *trigonal*; if four, *square*; if more, *polygonal*; if it be lightly ridged and furrowed on the surface, it is said to be *striated*; if more deeply, *canaliculated*; if full of protuberances, *scabrous*; if lightly hairy, *villose*; if more roughly so, *bispid*.

2. In the branched stalk, if the branches rise erect, it is expressed by *ascendent*; if they spread, by *diffuse*; if they are very large, it is called *brachiated*.

If the stalk divaricate, or, instead of sending out branches, divides into them, it is called a *composite stalk*; if these divarications proceed by pairs, or every branch is divided only into two others, it is *dichotomous*; if it part into two series of branches, it is expressed by the term *distichous*; if it part into a multitude of ramifications, *subdivided*. All these terms are used also in expressing the different states of the *culm*. When a stalk has no articulations, it is called *equal*; when scaly, *squamose*.

Scapus expresses a peculiar kind of stalk, which supports the parts of fructification of a plant, and does not grow from any part of the common stalk, but rises immediately from the root.

Peduncle expresses that little stalk, which grows from the trunk or branches of a plant, and supports the parts of fructification, the flower, and the fruit, or either: when this is produced from the stalk, it is called *caulinus*; when from the aze of the leaves, *alaris*; and, when it terminates the plant, or it's branches, *terminalis*.

Petiolus expresses that stalk which supports the leaves of a plant, as the peduncle does the fructifications.

Cirrus expresses the little fibres, which many plants send out from their stalks, and by which they are attached to other bodies.

Terms used in the descriptions of Leaves.

Simple leaves are those, of which the petiole carries but one; *compound leaves* are those, of which the same petiole carries many.

Orbicular expresses a leaf of a roundish figure, the breadth of which is equal to it's length, and every part of it's edges equally distant from the center.

Subrotund expresses a leaf approaching to the former figure, but departing from it, either in being too long, or too broad, or prominent in some one or more parts.

Ovatum expresses a leaf, the shape of which is like that of an egg, which is longer than it is broad, and the base or lower part of which forms a segment of a circle, though the other extremity is too small to be in proportion to it.

Obverse ovatum expresses a leaf of the same figure with the former, only fixed to the petiole by it's smaller end.

Oval. This expresses what might be more distinctively called *elliptic*; a figure approaching to round, but too long for it's breadth, and equal in diameter at both extremities, the two ends forming the same segments of a circle.

Oblong expresses a leaf, the length of which is many times equal to the breadth, and the extremities of which are both too narrow to form segments of circles.

Cuneiform expresses a leaf of the shape of a wedge; the length of which greatly exceeds the breadth, and the lower part of which grows smaller all the way.

Lanceolatus expresses a leaf of the shape of a spear-point, that is oblong, and growing smaller and narrower, from the middle to the extremity, where it terminates in a point.

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Linear

Linear expresses a leaf, the two sides of which run almost parallel to one another. The linear leaves are usually narrow, and somewhat broader in the middle than at either end.

Subulatus, of the shape of an awl. This expresses a leaf oblong and narrow, broadest at the base, and thence gradually terminating in a point.

Triangular expresses a leaf composed of three rectilinear sides, and three angles, the two inferior ones of which are on a level with the base.

Deltoide expresses a leaf that has four angles, of which those of the summit are farther distant from the center than those of the sides.

Quinquangular expresses a leaf, the sides of which are straight, and make five angles.

Reniform, of the shape of a kidney. This is a leaf of a suborbicular figure, hollowed a little at the base, but that without any angle.

Cordatus expresses a leaf of an ovated shape, hollowed a little on each side at the base.

Obversely cordatus expresses a leaf of the same figure with the former, but affixed to its petiole, not by the cordated part, which is the base in the former, but by the opposite end.

Lunulatus expresses a leaf in form of a crescent: it is a suborbicular leaf, hollowed at the base, with two curvilinear angles, in form of sickles.

Sagittatus expresses a leaf formed like the head of an arrow. This is the triangular leaf hollowed at its base, for the insertion of the petiole.

Cordato-sagittatus expresses a sagittated leaf, the sides of which are convex.

Hastatus, in form of a spear-point. This expresses a triangular leaf, the sides and the base of which are both hollowed, so as in some measure to give the resemblance of a leaf composed of three parts.

Panduriforme, of the shape of a violin. This expresses an oblong leaf, larger at both ends than in the middle, where it is cut in deeply, in a rounded manner.

Bifid, divided into two. This expresses a leaf divided into two parts at the top. When a leaf is thus divided into three parts, it is said to be *trifid*, when into four, *quadrifid*, and so on. *Multifid* expresses a leaf thus divided into a great number of segments.

Trilobus, divided into three lobes, expresses a leaf divided just down to the middle, into three parts, which stand separate from one another, and are rounded at the edges. In the same manner, a leaf thus divided into four parts, is called *quadrilobus*; or: into five, *quinquelobus*, and so on.

Palmatus, in form of an open hand. This expresses a leaf divided into several segments, from the top down to the middle, or to the base.

Pinnatifid expresses a leaf divided into several parts, in form of a fan, or that has three, four, or more, lateral sinus's separated by long, horizontal segments.

Laciniated expresses a leaf which has several sinus's down to the middle, and the lobes which separate these not smooth, but notched, or indented, at the edges.

Sinuatus; full of sinus's. This expresses a leaf which has a number of sinus's on its sides, but these separated by lobes not very long, nor themselves indented, or notched, at their edges.

Sinuato-dentatus expresses a leaf like the former, but with the lateral lobes of a linear figure.

Retorsum sinuatum expresses a leaf with sinus's at the sides, and with the lobes which divide them pointed, and turned toward the base, like the beards of an arrow.

Quinquepartitum, divided into five parts; a leaf that is separated into five parts, down to the very base, so as to seem made up of five separate leaves, till closely examined. In the same manner, a leaf is said to be *bipartite*, *tripartite*, &c. when the parts it is separated into are two, three, &c. in number.

Integrum, or *indivisum*, expresses a leaf which is entire, and not cut in with any sinus in the disk of the leaf. The term *integerrimum* expresses yet more, that it has no division, or sinuation, of any kind in the border, any more than in the disk.

Dentatum, dentated, expresses a leaf whose edge is beset with horizontal points, of the same matter with the leaf itself, and distinct and separate from one another.

Serratus expresses a leaf whose edge, or border, is notched like a saw, or furnished with points, which make acute angles, and are placed one bending toward the other, and all toward the top.

Retrorsum serratum; a leaf whose edge is furnished with the same sort of indentings, but in which they are turned backwards, or all look toward the base of the leaf.

Obfolete ferratum exprefles a leaf indented in the fame manner, but the indentings obtufe and weak.

Duplicato-ferratum exprefles a leaf ferrated as the firft, but with the ferratures large, and their edges ferrated again, with indentings of the fame kind.

Crenated exprefles a leaf, the edges of which are furnifhed with indentings, which are contiguous to one another, and are neither turned toward the point, nor toward the bafe.

Acute crenatum; a crenated leaf, in which the indentings are fharp at the ends.

Obtufe crenatum; a crenated leaf, in which the indentings terminate obtufely.

Repandum exprefles a leaf, the border of which is marked all round with fhort lobes, each making a fegment of a circle, with obtufe finus's.

Cartilaginous exprefles a leaf, the edge of which is furrounded with a kind of cartilage, or border, thicker than the reft, but of the fubftance of the leaf.

Ciliated exprefles a leaf which is furrounded all the way with parallel hairs, or filaments, fo as to give fome refemblance of the hairinefs of the eye-lids.

Lacerum exprefles a leaf, the edge of which is compofed of fegments of a different fhape and figure.

Crippum, curled, exprefles a leaf which is undulated, or folded over and over at the edge, which muft alfo be in fome manner divided, not entire, either dentated, ferrated, or lacerated.

Erofum exprefles a leaf which has feveral finus's in it's difk, and alfo in the edge, or border.

Tomentofe exprefles a leaf whole furface is covered with hairs fo fhort and fine, that the eye does not diftinguifh them fingly, though the leaf in general is evidently downy, both to the fight and the touch.

Pilofe exprefles a leaf whole furface is furnifhed with hairs fo large and long, as to be diftinguifhable by the eye feparately. The fame idea is exprefsed alfo by the terms *hirsutum*, *villofum*, and *lanigerum*.

Hifpidum exprefles a leaf whole furface is covered with more thick and rigid hairs.

Scabrous exprefles a leaf the furface of which has on it feveral little, irregular prominences.

Aculeate exprefles a leaf the furface of which is covered with cartilaginous points, fharp, rigid, and ftrong enough to wound any tender part of the flefh, and which adhere but lightly to the leaf, and may be eafily feparated from it.

Spinofe exprefles a leaf whole difk, or edge, is armed with cartilaginous points, fo firmly affixed, that they cannot be feparated, without injuring the leaf itfelf.

Papillofe exprefles a leaf the furface of which is covered with little, roundifh protuberances, or veficles.

Nitidum exprefles a leaf of a fmooth and gloffy furface, looking as if polished by art.

Plicated exprefles a leaf, from the bafe, or petiole, of which there run, at feveral diftances, vefels, or fibres, which extend themfelves to the extreme fides, and fome of which raife, and others deprefs, the difk of the leaf, in an alternate manner, making acute angles.

Undulated exprefles a leaf, the exterior part of the difk of which is of more extent than a circle of the fame diameter, fo that the edges are neceffitated to rife and fall in a regular manner.

Rugofe exprefles a leaf the veins of which are funk deep, and between which the membranous and flefhy part of the leaf riles in irregular forms, fo as to give, upon the whole, a wrinkled furface.

Venofum exprefles a leaf on the furface of which there are a vaft number of branched vefels, which frequently unite, in an odd manner, one with another.

Nervofum exprefles a leaf the vefels of which are fimple, and extend themfelves parallelly from the bafe toward the fummit, without any ramifications.

Nudum exprefles a leaf whole furface is fmooth and equal, without any particular marks.

Truncated exprefles a leaf the fummit, or point, of which feems to have been cut off, or is terminated by a ftrait line in a tranfverfe direction.

Retufum exprefles a leaf whole extremity is terminated by an obtufe finus.

Præmorfum exprefles a leaf which is truncated, and terminated by an acute finus at the fummit.

Emarginatum exprefles a leaf which has a little indenting on the fummit.

Obtufely

Obtusely emarginated is the term used, when this indenting is terminated on each side by obtuse points.

Acutely emarginated is used, when the points which form the indenting are acute.

Obtuse expresses a leaf which is terminated by a segment of a circle.

Acute expresses a leaf which is terminated by a sharp point.

Acuminated expresses a leaf terminated by a pointed and sharp extremity, like an awl;

Obtusum cum acumine expresses a leaf whose summit is obtuse, but is terminated by a fine, sharp point, affixed, as it were, upon it.

Teres expresses a leaf which is not flattened, as most are, but is of a cylindric figure, excepting the point.

Tabulose expresses a leaf which is hollow within, and makes a kind of tube.

Carnosus, fleshy; expresses a leaf which is full of pulp, or of a fleshy substance, contained between the membranes which form the upper and under surface.

Membranaceous expresses a leaf merely composed of membranes, with no pulp between.

Depressed expresses a leaf which has the mark of an impression on one side.

Compressed expresses a leaf which has the same kind of mark on both sides.

Convex expresses a leaf whose middle rises into a protuberant form.

Concave expresses a leaf whose middle is sunk, or hollowed.

Canaliculated expresses a leaf which is hollowed all the way of it's length with a channel.

Ensisiform, of the shape of a sword, expresses a compressed leaf, which is thin, and edged, as it were, on the sides, and which has a high rib running down it's middle.

Linguiform, in shape of a tongue, expresses a linear leaf, which is obtuse, fleshy, depressed, convex on the under side, and usually cartilaginous at the edge.

Triquetrum expresses a leaf which has three faces, or sides, all flat. This is usually also subululated, or grows gradually smaller from the base to the point.

Trigonal expresses a leaf that is much like the triquetrous one, but in this the several faces are each hollowed in form of channels, and the ribs are sharp and membranaceous. A leaf that has, instead of three ribs, or edges, four or five, in the same manner, called, *tetragonal*, or *pentagonal*, &c.

Sulcated expresses a leaf that has a number of ridges all round it, with obtuse sinus's.

Striated expresses a leaf that has a number of longitudinal furrows on it's surface.

Compound expresses, in general, a leaf which is formed of several other lesser leaves. In this large sense, however, it is divisible into several kinds: 1. The compound ones properly and distinctly so called. 2. The decomposed; and, 3. The supradecomposed; of each of which in it's place. In describing these kinds of leaves the whole leaf, which is the result of the combination, is called *folium*, and the small leaves, which together compose it, are called *foliola*. A *compound leaf*, properly and distinctly so called, is only formed of one series of foliola, or of one composition.

Digitated expresses a compound leaf, formed of a number of simple foliola, placed regularly on a common petiole: in a strict sense, however, it is used only to express such a leaf as is composed of more than four foliola.

Ternatum expresses a compound leaf, consisting of only three leaves on a common petiole.

Sessile expresses a leaf affixed immediately to the stalk, or root, without any petiole.

Petiolate is the contrary of sessile; it expresses a leaf affixed to a plant, by means of a peculiar pedicle, which pedicle, in case of a leaf, is called petiole, though, in case of fruit, a peduncle.

Binatum expresses a kind of compound leaf, formed only of two foliola on one petiole.

Ramulosum expresses a leaf of the compound kind, in which there are several foliola, sustained on a branched petiole.

Pinnated expresses a leaf formed in manner of a wing, and composed of two ranges, or series, of foliola, annexed to the two sides of one common, oblong petiole. Of the pinnated leaves, however, there are several kinds: 1. The *pinnated with an odd one*. This expresses the pinnated leaf, when, beside the two series just mentioned, there is an odd leaf at the extremity of the petiole. 2. The *pinnated abrupt leaf*. This expresses a pinnated leaf in which there is neither an odd leaf nor a tendril at the end of the petiole. 3. The *oppositely pinnated*; which is when the folioles stand opposite to one another on the common petiole. 4. The *alternately pinnate*; when the folioles stand not opposite, but alternately. 5. The *interruptedly pinnate*; in which the folioles are irregular and unequal in size or situation. 6. The *cirrdated-pinnate*, wherein the extremity of the petiole has one, or more, tendrils, instead of an odd leaf. 7. The *decurrenly pinnate*; in which the folioles extend beyond their proper base,

basis in going down the petiole, and, as it were, make it alated. 8. The *membranaceous pinnated*, of the same form with the last, but with the petioles themselves membranaceous and articulated. 9. The conjugated pinnated leaf, when the whole compound leaf consists of only two folioles on the petiole: this kind of pinnated leaf may be either abrupt, cirrated, membranaceous in the petiole, or stipulated.

Lyratum, in form of a lyre, expresses a compound leaf, formed of a simple leaf, which divides itself in its lower part, in such a manner, that the incisions below make segments, which stand out from the body of the leaf, and are detached from the larger segment, which forms the upper part.

Decomposite expresses a leaf, the common petiole of which divides itself twice, before it is furnished with leaves.

Duplicato-ternatum expresses a leaf consisting of leaves which are themselves composed of three leaves each.

Bigeminatum expresses a leaf formed of a double conjugation of lesser leaves.

Duplicato-pinnatum, or *pinnato-pinnatum*, expresses a leaf composed of several others, each of which is itself composed of several smaller leaves or foliola.

Supradecomposite expresses such leaves as have the common petiole divided more than twice, before it is charged with leaves or foliola.

Triplicato-ternatum expresses a leaf, the petiole of which divides three times, or into three branches, before any leaves or foliola are placed on it.

Ternato-ternatum, the same with *triplicato-ternatum*.

Triplicato-pinnatum expresses a leaf, the petioles of which send out three alated subdivisions, before it has any leaves on it. These are terminated sometimes by two foliola each, and in that case are said to be abrupt; sometimes by an odd leaf, and are then called *triplicato-pinnata cum impari*.

Inflexum expresses a leaf, which, in growing from its base, turns its point again toward the plant.

Erectum, or *erect*, expresses a leaf so situated, that it makes an acute angle with the stalk.

Patent expresses a leaf which stands almost straight out from the stalk, or nearly at right angles with it.

Horizontal, or *patentissimum*, is a leaf which grows perfectly horizontally with the stalk, or truly at right angles with it.

Reclinate, or *reflex*, expresses a leaf which has its summit lower than its base.

Revolutum expresses a leaf, the upper part of which rolls itself downward.

Radicans expresses a leaf which pushes out roots from its disk, or lower surface.

Natant expresses a leaf which floats upon the surface of the water.

Seminal expresses the leaf which appear first from the seed of a plant, and is usually different from the rest.

Radical expresses a leaf which grows immediately from the root of a plant, not from the stalk.

Cauline expresses a leaf which grows not immediately from the root, but on the stalk of a plant.

Ramosum expresses a leaf which grows not on the main stalk, but on its branches.

Subulare, a leaf which grows at the ramifications, or under that part of the stalk from whence there grow one, or several branches.

Florale expresses a leaf that is formed near the flower, and which never appears but with the flower.

Peltatum expresses a leaf, the petiole of which is affixed to the disk itself of it, and not to the base, or to the edge of the leaf.

Sessile expresses a leaf which rises immediately from the stalk, without any pedicle.

Decurrent expresses a leaf which adheres immediately to the stalk, or branch of a plant, without any pedicle, and which has its lower part extended, and running some way along the branch.

Amplexicaule expresses a leaf, the base of which extends itself in such a manner, that it environs and surrounds the stalk every way; in this case the leaf is generally of a sagittated, or heart-fashioned, shape, and is sessile.

Semiamplexicaule expresses a leaf resembling the amplexicaule, but with its lobes at the base, too small to entirely surround the stalk.

Perfoliate expresses a leaf, the disk of which is pierced by the stalk, the branch, or the peduncle, and does not anywhere touch or adhere to its edges.

Cannate expresses leaves cohering together, or whose bases unite so as to form but one body.

Vaginant expresses a leaf, the base of which is formed like a cylinder, and surrounds the stalk, as is the case in many of the grasses.

Articulated expresses leaves which grow one on the top of another.

Stellate expresses leaves which grow not less than six at a joint, and are arranged like the rays of a star.

Ternate expresses leaves which grow three at a joint, surrounding the stalk; when there are four or five, they are called *quaternate* and *quinate*; when more than six, *stellate*.

Opposita expresses leaves which stand two and two, with the stalk between them.

Alternate leaves, which do not stand opposite, but one over another all the way up the stalk.

Sparsa, leaves which are placed irregularly over the several parts of the plant.

Conserta expresses leaves placed in clusters, or so close to one another, that it is not easy to discover their exact situation.

Imbricata expresses leaves placed over one another, in the manner of the tiles of a house, or like the scales of fishes.

Fasciculata in little packets; this expresses leaves, many of which arise together from the same point.

Frondes expresses leaves, consisting of several other leaves, and forming the whole of the plant; as is the case in the fern kind, in which, the fructification being on the back of the leaves, the single leaf makes the whole plant. In this case it is not called *Folium*, but *Frondis*.



Classical Characters of Plants.

Plate 1.



THE
H I S T O R Y
O F
P L A N T S.

P A R T I.

B O O K I.

Of SUBMARINE PLANTS.

THE fresh waters produce a great number of plants, many of which are in all respects like those of the land, and have perfect and obvious fructifications, tho' no part of them ever reach the surface; but it is otherwise with the Submarine ones. They are wholly unlike other plants in their form, texture, and manner of growth, and have either no visible fructifications at all, or such as are very difficultly understood, as to their structure, and method of sacundation.

Their manner of growth also is wholly different from that of other plants.

Plants in general have been defined to be organised bodies, nourished by means of roots which penetrate into the earth; but the Submarines have no such roots, they adhere to the bodies, which support them by broad bases, which do not penetrate into the substance they are affixed to, nor is that generally a matter capable of affording nourishment, if they did: a piece of stone, or even a glass bottle, or any other thing, sunk in the sea serving for this purpose. The part by which they are fixed, evidently answers no other purpose beside that of fixing them; and the plants themselves seem to be all over root, or to take in nourishment from the circumambient water, by pores placed all over their surfaces.

In plants in which the parts of fructification can give us no characters for distinguishing the orders and genera, we must have recourse to other differences: of these the most obvious are the most eligible.

The texture of the Submarine plants is of three very different kinds, and, according to this, we shall therefore arrange them under three classes.

Submarines; Class the First. Those which are of a stony hardness, and not flexible.

Submarines; Class the Second. Those which are of a very firm and tough texture.

Submarines; Class the Third. Those which are of a tender and herbaceous structure.

B

S U B M A -

SUBMARINE S.

Class the Firſt. Genus the Firſt.

MYCEDIUM.

MYCEDIUM is a genus of Submarines of a hard and stony substance, not branched, regularly cavernose and lamellated; formed of gyri, or ridges very hard; and solid, surrounding the surface, or running over it in various windings and meanders, and leaving oblong, winding or undulated, cavities between them, which cavities are filled up with a matter of the same kind, formed into very thin plates or lamellæ of various structure.

No part of fructification has ever been discovered in any species of this genus.

These plants, from their resemblance to the Fungi in their structure and lamellæ, have been called by authors in general Fungi marini; to prevent confusion from similar sounds we have called them Mycædia, from the Greek *μυκή*, fungus.

1. *Mycedium convexum gyris sulcatis.*

The convex Mycedium with sulcated gyri.

Brainstone.

This is one of the largest of this genus. It is affixed to a rock, or other solid body, by a considerably broad base; from this it extends itself into an irregularly convex figure, sometimes globular, sometimes gibbous, and sometimes more flat. It grows very frequently to ten inches or a foot in diameter; sometimes to two feet or more. It is composed of a multitude of gyri or ridges, running in undulated figures, and divaricating into a multitude of others, which in many places grow to one another again. These ridges are of a very solid matter, and of a white colour; they are broader than a large packthread, and are sulcated or marked with a depression all the way along their middle. The interstices between these gyri are furnished with lamellæ, or thin plates of the same hard matter, disposed in a double row in each interstice. These leave a multitude of small unequal cavities between them. The great irregularity of the disposition of the gyri renders these interstices of various figures; they are usually oblong, but sometimes a few round ones are formed here and there: these form perfect resemblances of the *Astroites* or starry coral. The interstices between the gyri are large. This species is extremely common on the shores of America, and on those of the East Indies; we know it in England under the name of the Brainstone, a name given it from its resembling in some degree the appearance of the brain. Boerhaave calls it *Fungus maritimus coralloides undulatus*; and Ray, *Lapis fungites cerebriformis*.

2. *Mycedium convexum gyris integris.*

The convex Mycedium with undivided gyri.

This is a less common, but a much more beautiful species than the former. It grows from a large base affixed to a rock, to a very considerable size: a foot in diameter is not uncommon with it. It is sometimes highly convex on the surface, but it more usually rises less, and that in an irregular manner, some parts of its surface being much higher than others. It is all over undulated with gyri, which run in a beautiful irregularity over it, and join and divaricate again so frequently, that the configuration is strangely confused. These gyri are very slender, and the interstices, from their great number in the mass, are very small between them. The gyri are not sulcated as in the former species, but rise up in ridges, when perfect, though they are generally worn down to a flatness by the motion of the water. The lamellæ between these are very fine, and arranged in a double row, forming very small cavities between them. This grows on the shores of Barbadoes, and in many other parts of the West Indies. It is sometimes met with in the shops with us, confounded with the other under the common name of Brainstone. Beller describes it under the name of *Massa coralloides maris fluctuationem representans*.

3. *Mycedium*

3. *Mycedium cavatum undulatum.*
The Hollowed undulated Mycedium.

This is a very elegant body. Its general structure is the same with that of the convex kinds, but it differs extremely from them in figure. It grows to the rocks by a small base, not thicker than a wheat-straw; from this it expands itself every way, till at an inch height it is often two inches in diameter, and from this it expands to three, four, or more inches. From the base to within half an inch of the top, it is usually smooth; from this part to the edge it is striated; and its top is very beautifully undulated. Its circumference is a deeply sinuated line, and the two sides come every-where so near one another, as to leave but about half an inch for the lamellæ. The margin terminates every-where in a thin edge. The lamellæ fill up the intermediate space in a double series, joined as in the others by an opaque white line of a spongy texture in the middle; the lamellæ are very finely serrated, and, as they do not stand very close to one another, they make a beautiful appearance. The whole plant is white as snow, and of the hardness of marble. It grows on the shores of the Baltic in great abundance, and is found also on those of the East and West Indies. Bessler describes it under the name of *Fungus faxeus minor*, and Sir Hans Sloane under that of *Fungus lapideus minor undulatus*.

4. *Mycedium obverse conicum.*
The inverted conic Mycedium.

This is a much more simple species than any of the former in its external appearance, but it is more beautiful than most in its internal structure. It grows to an inch or two in height, and to the thickness of a man's thumb; sometimes much larger, but this is its usual standard. It is affixed to the rocks by a small and slender base; from this it gradually enlarges, and grows into the form of an inverted cone, the top being wider than any other part. The external surface is irregularly striated, the limb or verge beautifully undulated, and the whole cavity is filled up with thin, but long and broad lamellæ, rising from all parts of the internal surface, and meeting in or near the center; these do not stand very close, but leave deep, simple hollows between them. The whole is sometimes of a pure, fine white, sometimes of a brownish white colour, and is of a hard and stony texture. This is the usual appearance of this plant, but it is subject to great variations; sometimes it grows to a much greater length, with little more thickness; sometimes it is shorter and broader, and sometimes several plants of it grow one out of another, in the manner of the cups in the proliferous cup mosses; in this last state, it makes a very elegant figure.

It is found, in all its variety of appearances, about the coasts of the East Indies, and not unfrequently on those of America. Bessler has described this under the name of *Fungus coralloides pezize forma*; others called it *Fungus faxeus vulgaris*.

5. *Mycedium patulum cancellatum.*
Open cancellated Mycedium.

This is a yet more elegant plant than the conic Mycedium; it rises like it from a small base, and gradually expands to a considerably wide mouth. Its usual height is an inch or half, its breadth about an inch. Its external surface is striated pretty deeply, and is lightly marked with transverse lines. Its edge is undulated, and the expansion is sometimes roundish, sometimes oblong, and often perfectly irregular. Its whole cavity is filled up with long and fine lamellæ, which form cavities between them, which are again intercepted by regular transverse flakes, of the same substance with the lamellæ themselves, and equally thin. This is a very beautiful plant in this its common state; but nature frequently luxuriates and forms oblong bodies, composed of several of these placed on one another. Its colour is white, and its texture stony. It is found about the shores of Italy, on those of some of the islands of the Archipelago, and in many other places. Some of the old botanical writers have left us imperfect descriptions of this, under the name of the *Alcyonium quintum Dioscoridis*.

6. *Mycedium*

6. *Mycedium planum lamellis longissimis.**The flat Mycedium with very long lamellæ.*

This is also an extremely beautiful species, and perfectly different from all the rest. It grows to the rocks by a broad base, which is often placed at one edge, not in the center, as in the other Mycedia; from this it expands into various long and broad plates, of different thicknesses, and very irregular figures. The under surface of these is often protuberant in some places, and hollowed in others, and is irregularly furrowed with longitudinal lines running from the base toward the edge; its upper surface has a number of irregular gyri, broad, solid, and white, sometimes plain, sometimes punctated on their surface; and between these there run very long and considerably thick lamellæ.

This often grows to a foot or more in length, and near as much in breadth. Imperatus has described it under the name of *Fungus petrosus*, and Boerhaave under that of *Fungus coralloides agarici forma*. It is frequent about the American islands.

After these general descriptions of the more singular species of the Mycedium, the others will easily be known by their names: They are, 1. A yellowish-white Brainstone Mycedium, with thin gyri. 2. A large kind, with blackish gyri, and white lamellæ. 3. The Brainstone Mycedium, with its cavities divided by transverse septa. 4. The Brainstone Mycedium, with extremely thin lamellæ. 5. The Brainstone Mycedium, with large cavities. 6. The Cup Mycedium, with lamellated pores. 7. The Cup Mycedium, with undulated laminae. 8. The funnel-shaped Cup Mycedium. 9. The high-ridged, flat Mycedium.

These are the different species hitherto known, beside those already described: descriptions of these would be tedious, and are unnecessary, as the general structure is the same in all, and their specific names are sufficient to express their differences. The variety of the Mycedia is indeed almost infinite; and people who do not examine their real characters, but judge of them by their form, might extend the number of supposed species to more than a thousand. Where we know nature sports in variation so much, we are to be upon our guard against taking varieties for species. All the Mycedia I have seen may be justly referred to one or other of these kinds.

All these Mycedia, and many of the *Asterææ* of the following genus, are taken up by the people of the West Indies for burning into lime. They make a very good sort, but less durable than that burnt from hard stone.

S U B M A R I N E S.

Class the First. Genus the Second.

A S T E R Æ A.

A S T E R Æ A is a genus of Submarines, consisting of a stony matter, formed into simple or unbranched masses, regularly cavernose and lamellated, made up of solid gyri, or ridges, running into round, or nearly round configurations, and forming cavities of the same shape, which have lamellæ propagated from their sides, and converging to a point in the center, and by that means produce in each cavity the figure of a radiated star.

No part of fructification has ever been discovered in any of the species of this genus; but the botanic writers have, from the figure of a star in the cavities, given it the name of *Fungus Astroites*, or, simply, *Astroites*: the same word *Astroites* being used somewhat more properly for this body in its fossil state, we have, to avoid confusion, called it in its native state *Asterææ*.

1. *Asterææ stellis majoribus ovatis.**The large, oval starred Asterææ.*

This is one of the least beautiful species of this genus; it is of a coarse structure, and dusky white colour; it rises from a broad base, and expands into a large thick mass, of an irregularly convex figure. Its general size is that of a man's head, but is often twice or thrice as large. Its surface is formed of gyri, arranged into irregularly oval figures, with

with no spaces between them, and the cavities of them furnished with short lamellæ meeting in the center; the matter of the gyri is coarse, and they are considerably thick, and somewhat rounded on their surfaces. They are often worn down by the motion of the sea, and are then found to be cavernous in their structure. The lamellæ are moderately thick, and are not placed very near one another.

This species is frequent about the shores of the East Indies, and in many other places. Besser has described it under the name of *Fungus lapideus porosus*; and Boerhaave calls it *Fungus coralloides astroites*.

2. *Asteræa stellis majoribus, rotundioribus.*

The Asteræa, with large, round stars.

This is a very beautiful species. It grows to a considerable size, a foot in diameter, or more than that; and is of a beautiful white colour, and great hardness. It adheres to the rocks by a broad base, and from thence it extends itself in a circular manner, rising into the form of a segment of a sphere. Its whole surface, in sight from above, is starry; it is formed of gyri, considerably thick, solid, and of the colour and appearance of white marble. These run into very regular circles, and form a beautiful appearance. Nature is not so perfectly regular in the structure of this body, but that some of the circles blend with, or injure one another, and by that means produce irregular figures; but the greater part are very perfectly round; and, as circles are figures which can only touch in small parts, there are spaces of various figures interperfed every-where between the circles, by which this species is, at sight, distinguished from the former. These spaces are filled up with lamellæ, produced from the external surfaces of the gyri; and the cavities within the gyri are regularly and beautifully stellated, lamellæ from all parts of the internal surface running to meet in the center. These lamellæ are moderately thick, and stand at a considerable distance from one another. There frequently are not more than ten, sometimes only five or six of them in each cavity, with the rudiments of some imperfect ones between.

This beautiful species is found about the shores of Jamaica.

The distinctions between these *Asterææ* have been so little attended to by authors, that we cannot fix any certain synonymon for this species: it is probably one of the *Fungi coralloides astroitis varis* species of Boerhaave; but he has not been at the pains to distinguish them.

3. *Asteræa stellis minoribus rotundis.*

The small, round-starred Asteræa.

This is an extremely elegant species, and is less common, as well as more beautiful, than either of the former. From a roundish flat base it expands itself into a very convex, but irregularly-figured mass, sometimes roundish, oftener oblong. It is very white, and of a very firm texture: its usual size is that of a man's fist; but it sometimes grows considerably larger. Its surface is formed of gyri, smooth, solid, and considerably thick, which form themselves into roundish figures, sometimes perfect, but oftener injured by one another. The spaces between these are as beautifully lamellated as the cavities they form: the cavities themselves are very small, and are filled with numerous and very thin lamellæ, placed so close, that there are often between twenty and thirty in a cell. They are of a less bright white than the gyri, but they make a very beautiful figure, resembling most of all the species, a radiated star.

This is found about the shores of Antegna, and in some other parts of America.

4. *Asteræa stellis magnis angulatis.*

The great angular-starred Asteræa.

This is one of the largest species of this genus: 'tis of an extremely solid and firm texture, and of a yellowish-white colour; though the yellowness easily wears off, on its being exposed to the air. It grows to the rocks by a firm base, which conforms itself to the shape of the part of the rock it grows to; and from this it extends itself to eighteen or more inches in breadth: its masses are usually rounded, and somewhat convex, but more flattened than those of any of the others. Its surface is composed of gyri, which are very thick, and somewhat rounded on their surface: these touch in all points, so that

C

there

there are no spaces between; and they form, by this means, irregularly pentangular or hexangular figures. These are large, and their cavities filled up with very numerous, thin, and beautiful lamellæ: there are often sixty, or more of these in a cavity.

This species is found in the Mediterranean, growing often deep under water, on the rocks near the shore.

5. *Asteræ gyris crassissimis planis.*

The thick and flat partitioned Asteræ.

This is by much the most singular of all the species of *Asteræ*; in all the others the stars make up the greatest part of the surface, whence we have named them from those, as the most obvious marks of distinction; in this, the gyri take up the far greater part, whence we name it from them. This grows from an extremely large and broad base, which seems indeed a kind of core to it; the matter of the surface often making only a shelly covering over it. It is usually met with of the bigness of a hen's egg, or thereabout, but it sometimes grows much larger. Its figure is rounded, and very convex. The gyri are extremely hard, and as white and solid as ivory near the surface; within they are full of holes. They do not rise into rounded surfaces, as in many of the other species, but are flat, and, in general, of the breadth of a large straw; in some places, where they coalesce, they are much more: they are dispersed over the surface in irregular and strange forms; but they every-where make cavities, which are small, and of a roundish, or irregularly-oval figure; these are radiated with lamellæ, in the same manner as those of the rest. They are thin, small, and not placed very near one another; and it is singular in this species, that the stars are deep sunk in from the surface, so that the gyri only, at a little distance, are seen; and these give the whole much of the appearance of that kind of mushroom which we call the Morel.

This is less frequent than the others, and is oftener found in the East Indies than any where else. Boerhaave, from its external resemblance to the boletus, or morel, calls it *Fungus marinus lapideus boletum Tournefortianum* referens: he adds, *Colore cinereo*. But the true colour of the species is pure white.

These are all the distinct species of the *Asteræ* yet known; the varieties of them are almost innumerable, but all may be referred to one or other of these.

SUBMARINES.

Class the First. Genus the Third.

MADREPORÆ.

MADREPORÆ is a genus of Submarines, of a stony hardness, but somewhat approaching to the ordinary figure of vegetables in its form. It is composed of a main stem, divided and subdivided into a number of branches, which are full of pores, or holes, running from the circumference to the center of the branch, and furnished with lamellæ, disposed in a stellar or radiated manner.

The surface in some of the species is smooth, and the pores larger, and at greater distances. In others it is striated, and the pores are smaller and closer. The striae in these species are formed of a kind of lamellæ, growing from the surface of the tubules which form the pores. These always stand out beyond the rest of the surface, and their cavity is frequently intercepted by little transverse lamellæ within, which divide it into cells, in the manner of the cavities in the nautili and cornua Ammonis. Many of the *Madreporeæ* approach to the nature of coral in their texture: others of them are less hard.

1. *Madreporeæ glabra poris magnis.*

The smooth Madreporeæ with large pores.

This is the plant generally known under the name of White Coral. It is a very beautiful species of *Madreporeæ*. It grows to eighteen or twenty inches in height, and frequently extends its ramifications so wide every way, as to be in the whole nearly as much in diameter. It grows up with a single stem, of the thickness of a man's thumb,

or

or more: this is not strait, but tortuous, and full of prominent tubules, open at their tops, and forming pores; this main stem soon sends off a number of branches, which again ramify into several more, extending themselves every way, and sending out, at different spaces, other short branches, which seem, indeed, no more than long tubules, or conduits of pores. Beside these, the whole plant has it's surface spangled over with pores, at small distances, a quarter of an inch, or more, being left solid between them, sometimes considerably more. The pores in the larger branches are such, as will admit a tare; in the smaller branches they are less, but in all considerably large. They stand out a little way from the surface, and have a smooth edge: within they are radiated with lamellæ, like those of the asteræ. The colour of this species is a fine, bright white; and it's surface between the pores is bright and glossy. It looks perfectly smooth, till closely examined; but it is then found to be lightly striated, especially in the larger parts of the plant. The branches, when broken, shew a solid texture, except just where the pores run; they are whiter within than on the surface, and the constituent matter seems very like that of red coral.

It is found on the rocks, under water, about the shores of Italy, and in many other places. Tournefort calls it *Madrepora vulgaris*; C. Baubine, *Corallium album oculatum officinarum*.

2. *Madrepora striata poris minoribus frequentioribus.*

The striated Madrepora with more frequent and small pores.

This is an extremely elegant plant. It rises with a single stem, of an inch, or more, in diameter, which soon divides itself into a great number of branches; and these send off others, till, from the whole, there is formed a beautifully ramose figure, of a foot or two in height, and nearly of as much in diameter. The branches are many of them as thick as a man's thumb; they are usually a little crooked, and all point upwards. The whole plant is usually of a beautiful white, sometimes greyish, and is very brittle, which is owing to its being very porous. The surface is all over covered with little prominences, of the bigness of half a barley-corn, or thereabout. These are broadest at the base, and smaller at the point, and are lamellated very finely and beautifully on the outside. These lamellæ are continued from the summit of one protuberance to the base of another, and, by that means, form the striated surface of the whole plant: these protuberances are the tubules of the pores: they are all open at top, and are beautifully lamellated within, their lamellæ, like those of the external surface, being extremely thin and fine. If a branch is broken, it is found to be of an extremely lax and cavernous texture, and every pore of the surface is seen to be carried down to the center, where there runs up another cavity, filled with lamellæ, as the rest are, up to the summit of the plant.

This is frequent about the shores of the East Indies, and is sometimes met with about those of the Caribbee Islands; it grows to the rocks, at a little depth under water.

3. *Madrepora poris depressis.*

The Madrepora with depressed pores.

This is a very beautiful species of *Madrepora*, and very different in it's structure from most of the others; it does not grow to the height that many of them do, but it expands sufficiently in breadth, and it's branches are not round, but flattish. It rises with a single stem, of a very irregular figure, protuberant, but flattish; this, at the height of an inch or two, divides into several branches, which usually extend themselves horizontally, and are flat, often about an inch in breadth, and not more than a third of an inch in thickness: these also frequently send off other branches of the same figure; but some of these, as well as some of the large ones, approach more to roundness than the others. The whole plant often extends to a foot or more horizontally, though not above five inches in height. It's colour is a pure white. It's surface is covered with little roundish depressions, capable of admitting the head of a moderate pin; they stand very close to one another, and the interstitial matter between them is granulated: among these pores there rise also, on different parts of the branches, a vast number of little protuberances, about an eighth of an inch in length, and nearly as much in diameter, and of a perfectly irregular figure: these are not the tubules of pores as the pro-

protuberances on the surface of the former species are, but are solid, and themselves covered with depressed pores on their surfaces, like the rest of the branches. The bottom of these depressions seems solid, but, when nicely examined with a microscope, it is found to be full of small holes, which communicate with cavities within. A branch of this species broken appears of a very beautiful white, but full of pores and cavities; there runs along the center of every branch, indeed, a cavity, furnished with it's lamellæ, affixed to an axis in the middle; and from this are propagated other cavities sideways, formed in the same manner, and communicating with the pores or depressions on the surface.

The descriptions botanic writers have given of these bodies are so very imperfect, that it is not easy to say whether any of them have described this, or whether it is a new species. I received it from the East Indies, where it is common on rocks under twenty or thirty feet water.

4. *Madrepora ramosissima poris minimis.*

The most branched Madrepora with very small pores.

All the Madrepore are beautiful, but the elegantly-branched figure of this gives it a superior beauty to them all. It rises from a broad base, fixed to a rock, with a single stem, of the thickness of a man's thumb; this continues naked for four inches, or thereabout, after which, and sometimes sooner, it begins to divide into a number of branches. It grows in the whole to about a foot in height, and eight or ten inches in extent. It's branches are beautifully ramified, till at length they terminate in portions scarce thicker than a packthread; and they send out a number of these small shoots also sideways, whence the whole has much the appearance of a shrub, with branches and leaves upon it. The stalks are all round, and are beset with multitudes of extremely small pores, which scarce have their edges at all raised above the rest of the surface: these pores stand very close, but the interstitial matter between them is also porous. The pores of the larger kind are scarce big enough to admit the head of a small pin, the others are hardly distinguishable by the naked eye. The plant is brittle, and it's branches, when broken, appear cavernous or spongy. Clusius was the first author who described this plant; his description is but imperfect; his name for it, *Abrotanoides, planta fixæ*. Boerhaave calls it also *Madrepora abrotanoides*, as have most of the other botanical writers, from a supposed resemblance of it's finest ramifications to the leaves of the *abrotanum fœmina*. It's general colour is a beautiful white, but it is sometimes found greyish or yellowish. It's ramifications also usually terminate in sharp points, but they are often found obtuse and rounded, by the motion of the water. Authors have made three several species of it: 1. Yellowish *Madrepora abrotanoides*. 2. A grey one with sharp-pointed tops; and, 3. A grey one with obtuse tops. It is found deep under water near the East Indies, in considerable abundance. It grows to the rocks or to loose stones.

These are the most beautiful and the most singular species of the *Madrepora*; and they explain the four several appearances of the plants of this genus. Many authors have extended the number of species very far, by reckoning the varieties of one or other of these, or the others, as such: the real, distinct species, however, beside the four already described, are, 1. The great tree *Madrepora* of authors: this grows to two feet high, and is two inches or more in diameter at the base. 2. The great stony *Madrepora*. 3. The coral-like *Madrepora* with a smooth surface. 4. The little *Madrepora* with very small pores. 5. The *Madrepora* with larger tubercles. 6. The bladder *Madrepora*. 7. The brown, small, starred *Madrepora*. 8. The cypress *Madrepora*: this much resembles the last of those described here, but it's ramifications are shorter. 9. The buckthorn *Madrepora*. 10. The broad-branched *Madrepora*. 11. The *Madrepora* with foliated extremities. 12. The fibrose *Madrepora*: this is distinguished from all the others by it's being covered with stony excrescences, as fine as hairs.

After the general characters and descriptions of the former species, these will easily be known by the characters conveyed in their names.

SUBMARINES,

SUBMARINES.

Class the First. Genus the Fourth.

ESCHARA.

ESCHARA is a genus of Submarines, composed of a gritty matter, but not very hard, of a reticulated texture, and sometimes disposed into the form of leaves; always consisting of a thin expanded matter, perforated with numerous holes, roundish, oblong, or irregular in figure, and these so close to one another, and so equally continued through the substance, as to give the whole the appearance of a net.

1. *Eschara latissima undulata.**The undulated broad Eschara.*

This species adheres to rocks or stones by a broad base; from this it rises in form of a thin and flat undulated crust, narrowest at the base, and expanding itself toward the extremity. Sometimes a single body of this kind, sometimes several such arise from the same base. They are six or eight inches over in their broadest part, and are irregularly curved, and jagged at the edges, and sinuated round the top; they sometimes rise perpendicular, sometimes grow out horizontally; they seldom exceed the thickness of a crown-piece any where, except near the base, and toward the extremities they are much thinner. They are every where pierced with irregular holes, and those placed so close to one another, especially toward the extremities, that the interstitial matter only forms irregular lines of no great breadth between them; nearer the base it is more solid, and the holes are fewer. Its genuine colour is a pale, greyish brown, but it is often found quite white. It grows usually under twenty or thirty feet water, sometimes in shallower places; seen in its growing state, it makes a very beautiful figure, but it is very rare to have it taken up entire. It is so brittle, that the least violence breaks it to pieces.

It is common about the shores of the Mediterranean. Imperatus calls it Retepora; others, Eschara marina, and Porus reticulatus; Cæsalpine, by the strange name Rosa marina.

2. *Eschara marginibus cauliculatis.**The stalky edged Eschara.*

This is to the full as elegant and beautiful a plant as the former. It rises from a broad, smooth base. Two or three, sometimes more plants of it, arise together, sometimes only a single one. Each plant is somewhat like a large oblong leaf in form, but very different in texture. It is formed of a gritty matter, two inches or more broad near the base, and a third of an inch thick; from this part it lengthens and expands itself in an irregular manner, growing to six or eight inches long, and nearly as much in width; it is deeply jagged at the edges, and at the top. Its whole substance is pierced with a great number of pores or holes of an irregular figure, but what is singular in it is, that all round its edges and ends there grow a short kind of stalks of a flatted figure, and of the thickness of a small packthread; these unite with one another at their ends, and by the extremities of their several ramifications, and by this means form a perfect resemblance of a net; the stalks themselves looking like the cords or thread, and the cavities between them resembling meshes or holes. This elegant and open reticulated edge gives a great beauty to the plant; the whole of it is of a fine white colour. It is frequent about the shores of the East Indies, but it is so brittle, that we very rarely meet with a tolerable specimen of it.

J. Bauhine has described it under the name of Eschara marina frondipora; and C. Bauhine and Imperatus, under that of Frondipora and Eschara marina.

3. *Eſcbara ramoſa dichotoma.**Branched dichotomous Eſcbara.*

This is an extremely ſingular ſpecies of *Eſcharia*, ſofter and leſs brittle than either of the others, but of the true reticulated texture, which diſtinguiſhes the genus.

It grows to ſtones, ſhells, or other ſubſtances lying at the bottom of the ſea, by a broad baſe; from this it ariſes flat and thin, and of about half an inch, or leſs, in diameter. It does not continue ſingle a quarter of an inch, but often immediately from the baſe divides into a number of branches, fix, eight, or more; theſe divide again at an inch height, and their ramifications divide yet again. The diviſion is always into two, or in the Dichotomous order. The ſeveral branches are narrow at their baſe, and grow gradually broader all the way to the extremity. They form a large cluster upon the whole, of a roundiſh figure, three or four inches in height, and as much in diameter. The branches are ſcarce a ſixth of an inch broad near the baſe, and half an inch or more at the top. They are no where thicker than a coarſe paper.

The whole plant is of a pale, browniſh white colour, and of a ſomewhat gritty, friable texture, but much leſs ſtony between the teeth, and leſs brittle than either of the former. It is all over of a very elegantly reticulated texture; the holes are capable of admitting the head of a very ſmall pin, and they ſtand ſo cloſe, that the diviſions between them are ſcarce ſo thick as the fineſt hair. The holes are of an oval figure.

The plant, in its manner of growth, extremely reſembles ſome of the dichotomous *fucus*'s, and has been thence called by Ray and other authors, *Fucus telum lineam ſericæmve texturæ ſua æmulans*. John Bauhine calls it *Alga marina platyceros poroſa*; and Imperatus, *Porus cervinus*. It is frequently thrown up on our own coaſts.

It is a wonder that authors ſhould not conſider, before they ranked this with the *fucus*'s, that it is not tough like them, but fragile, and may be rubbed to pieces between the fingers.

4. *Eſcbara convoluta.**The convoluted Eſcbara.*

This is a very ſingular ſpecies. It grows to ſtones, ſhells, or other ſolid ſubſtances, at the bottom of the ſea, by a flat and broad baſe. From this there ariſe five or fix ſtalks of a flatſhiſh figure, hollow, and of the thickneſs of a ſmall thread; theſe immediately divaricate into a number of others, and become ſo very numerous, that they form a cluster of an inch diameter, which is more than their utmoſt height. The branches are ſtrangely twiſted and entangled among one another, and they coaleſce at their extremities and in many other parts, ſo as in the whole to form a kind of network, the ſolid ſubſtance of which is much more in quantity, than the cavities or meſhes. The whole plant is of a beautiful white colour, and often, by its various in-oluſions and coaleſcences of the branches, forms in the whole a ſort of globular figure. It is brittle, and eaſily ground to powder between the teeth. It is frequently caſt up on the ſhores of the Mediterranean, but is ſo little regarded, that we ſeldom meet with it in the collections of the curious. J. Bauhine and Ray ſeem to have deſcribed it under the name of *Reticulatum tophaceum marinum*. Bauhine ſays, the cluster of it reſembles a net wound up into a bundle, which is a very juſt obſervation.

SUBMARINES.

Clasſ the Firſt. Genus the Fifth.

TUBULARIA.

TUBULARIA is a genus of Submarines, conſiſting of cylindric tubes, riſing from a thin cruſt of the ſame matter with themſelves, which is of the hardneſs and ſtructure of coral. Of this ſingular genus we at preſent know only one ſpecies.

Tubularia

TUBULARIA.

The first appearance of this elegant body is a thin crust of a purple coralline matter, extending itself over any solid substance, and conforming itself to its shape. This is of the thickness of a common writing paper, or a little more, and of a smooth surface. From this there soon arise a number of hollow cylindric bodies, of the same colour, and formed of the same matter with the crust. These are of the thickness of a large packthread, and run up naked to about a third of an inch in length; they are very thin in the crust, and contain a simple cavity within; at the height of about a third of an inch, there is formed another crust like that from which the tubes arose; this forms an even surface about the tubes, whose tops stand a little way above it, and are there closed with a transverse septum of the same matter with the rest. From this crust the tubes are continued a third of an inch more, where there is another such crust, and so on to the top. The tubes generally grow in great clusters, two or three hundred together, and are connected firmly at these short distances by the crusts: the whole often rises to three or four inches in height, and is of two inches or more in diameter. It's upper surface is composed of a crust like the rest, with the mouths of the tubes just appearing above it, and seeming prepared for a continuation of growth as from the base; it is frequent to see from six to ten or twelve of these crusts in a mass, distinguishing it as it were into so many series of tubes, though in reality the same tube is carried up all the way from the base to the top, only separated in its cavity by these transverse septa. It is common about the shores of the East Indies, and adheres usually to the large corals, sometimes to shells or stones. It is throughout of the colour of red coral, and makes a very beautiful appearance. Imperatus calls it *Tubularia purpurea*; and C. Bauhine, *Corallis affine alcyonium rubrum*.

SUBMARINES.

Class the First. Genus the Sixth.

ACETABULUM.

ACETABULUM is a genus of Submarines, consisting of a single stalk, sustaining at it's summit a round body, at first hollowed like a funnel, but afterwards flat. There is only one known species of this genus. Tournefort, C. Bauhine, and some others, have indeed mentioned two, a larger and a smaller, but they are evidently no more than the same species in a different state.

ACETABULUM.

This elegant little plant rises with a single stalk, of the thickness of a coarse thread, and of an inch and half, or two inches in height; this is simple, unjointed, and hollow: at it's top it expands at first into a conic cavity, which by degrees enlarges till the whole plant resembles a little funnel, with a very long stem. After this the top by degrees grows more and more flat, till at length it is perfectly so; and is then nearly of the breadth of a six-pence, and as thick as a coarse paper. It is perfectly round, and has a rim of a thicker matter than the rest, running round it like a packthread; the stalk is inserted in the center of this body, and from that center to the circumference, both on the upper and under side, there run a great number of lines. The whole plant is of a greyish colour. It grows to shells, stones, and a variety of other things under water. The botanical writers in general have described it. J. Bauhine calls it, *Androsace five umbilicus marinus*, and *Fungus petraeus marinus*; Parkinson, *Cotyledon marina*. Any name is better for it than *Androsace*, because that was the name of a very different plant among the Greeks.

SUBMA.

S U B M A R I N E S.

Class the First. Genus the Seventh.

O R M U S.

OR M U S is a genus of Submarines, composed of a considerable hard matter, formed into short and broad joints, which are fastened in several series one to another, without any pedicles, and in such manner, that they resemble a string of beads in a necklace. The manner of these several joints growing, as it were, out of one another, has some sort of resemblance to that of the leaves of the *Opuntia*, whence many have called the plants of this genus *Opuntioides*. There are only two species of it known.

1. *Ormus segmentis brevibus latis.*
The broad and short jointed Ormus.

This elegant and singular plant grows to rocks, stones, shells, or other substances at the bottom of the sea, by a small flat base, from this rises a single joint, which is usually about a quarter of an inch long, and near as much in breadth at the top, but narrower at the bottom. It is flat in its whole length, but considerably thick; from this single joint there arise two or three others of the same form, but broader a little; these immediately furnish each several others, and these last send out others. Each of which, as the first, produces several more joints, all seeming to grow out of one another: they are fastened to each other, without any pedicle. Four, five, six, or more of these, grow in each series, so that, from the single joint at the bottom, the plant grows to about two inches in height, and as much or more in breadth. The succeeding joints are shorter and broader than the two or three first; they are joined to the head of the last by a broad base, and from this extend into a semicircular form; they are in general somewhat broader than they are long, and are undulated at the extremity where they are circular. They are considerably thick and of a gritty substance. The whole plant is naturally of a white colour, but it is sometimes tinged to a reddish, sometimes to a greenish or yellowish hue. It grows to shells and stones at the bottom of the sea, and is common about the shores of America in several places. Boerhaave calls it *Opuntioides marina parva forma trichomaris*; and Sir Hans Sloane, *Corallina opuntioides ramulis densioribus & foliis magis sinuatis & corrugatis*.

2. *Ormus segmentis rotundioribus.*
The rounder segmented Ormus.

This grows to four or five inches in height; its segments or joints grow one out of another, in the same manner as those of the former, but they are larger, and of a more rounded figure. They are of the same colour and consistence, but they are less thick in proportion to their size. The whole plant is frequently of a greenish colour. It is found about the shores of the Caribbee Islands, and in the East Indies. Imperatus has described it under the name of *Sertularia*; and J. Bauhine under that of *Opuntia marina*.

S U B M A R I N E S.

Class the First. Genus the Eighth.

C O R A L L U M.

CO R A L L U M is a genus of Submarines, composed of a hard, stony matter, formed into ramifications, and resembling the trunk and branches of a tree; solid throughout, and not porous, spongy, or stellated on the surface. Often covered with a bark of a softer matter, which easily falls off; sometimes naked.

1. *Corallum*

1. *Corallum rubrum.*

Red Coral.

This deservedly stands at the head of the Coral class, as more beautiful and more useful than them all. It grows from a broad base, extending itself over any thing solid, and conforming to it's shape; this often spreads to two, three inches, or more, in diameter; often it is not half an inch; it is commonly of about the thickness of a shilling, and of the same colour and consistence with the rest of the plant. From this rises usually a single stem, sometimes two or three grow from the different parts of the same base, and often these join in their growth up, and, at an inch or two distance from the base, form only one common stem. The thickness near the base is from that of a man's finger to near an inch in diameter, and it's height from five or six inches to a foot or more. The main trunk sends off from every part considerably large branches, which again divide themselves into others, and form, upon the whole, a very beautiful appearance: they sometimes grow out irregularly, and on all sides; sometimes only opposite, or nearly so, to one another, and then the whole shrub has a flat form. The stem and the main branches are full of little knots and depressions. We meet with Coral in its ramified state smooth on the surface, and of a fine red; but we are not to suppose this to be it's state in the sea. It's surface is deeply striated naturally, and it is wholly covered with a crust of a fungous substance, full of an acrid milky juice, and not of the fine florid red of the Coral, but of a yellowish, greenish, or orange colour. This crust is covered all over with little granules, and in the center of every one of these there is a hole, which seems contrived for receiving the nutritious matter from the water. Beside these granules, there are also other papillæ in the crust, which are open at the top; the opening sometimes is simple, sometimes divided into six parts; these are divided within into little cells. The internal surface of the crust is striated deeply, as well as the external one of the stony part; and these striae are so adapted one to another, that they form so many tubules, running from top to bottom of the plant, and along every branch of it, in great numbers. There are cells in the stony internal matter, as well as in the external crust, and these, as well as the others, are filled with a whitish acrid liquor, and the tops of the branches have tubercles of the cortical matter, divided into several cells within, and full of the same milky and acrid juice. This species is found on the coasts of the Mediterranean, and in several other places, where it is dragged up with particular engines in great abundance. It is described by all the botanical writers under the name of *Corallium rubrum*; and some of them tell us they have seen octopetalous radiated flowers, standing in cups, arising from the tubercles of the bark. Red Coral is used in medicine as a mild astringent, and as an alkali and absorbent, with good success. The other species would probably answer the same purposes, but they are not used.

2. *Corallum album.*

White Coral.

This much resembles the red Coral in its manner of growing, except that it is more branched. It arises from a broad base, conforming itself to the shape of the substance it grows upon, extending to two or three inches in diameter, and of the thickness of a coarse paper. From this base there arises a thick and irregularly-figured stem, sometimes roundish, often flattened and protuberant in various places. This sometimes continues single, sometimes divides, at half an inch, or less, height, into two or three trunks: if there are more than one of these trunks, the plant is the smaller, but the more bushy; if only one, which is the most beautiful state, it rises to six, eight, or ten inches high, divaricated into a multitude of branches, and each of these sending off other smaller and shorter ones: the branches are round, and often meet and inoscule with one another. The surface is perfectly smooth, not striated, as that of the red Coral; and the whole plant of a beautiful white colour. When taken into the hand it is found to be vastly lighter than red Coral, and when broken is found of a much less compact and solid texture. It is found about the shores of the Mediterranean, growing to rocks, stones, or any thing solid, and is often brought up in fine pieces. Ray tells us he saw several fine shrubs of it offered to sale at Genoa. The botanical writers have all called it *Corallium album*; but most of them have also described other things

under this name: the madreporæ of several kinds, in particular, are pretty currently called white Coral, and sold for it in the shops.

3. *Corallum nigrum.* *Black Coral.*

The general practice of receiving the madreporæ into the shops under the name of white Coral, and of receiving also the ceratophyta under the name of black Coral, has taught many people to believe that there was not, in reality, any such thing as either white Coral or black Coral in the world; but people who have examined into things more deeply find it otherwise: black Coral is indeed too scarce, and too much out of use in medicine, to be expected in the shops at this time; but specimens of it are frequent in the cabinets in Italy and Germany, and tolerably handsome plants of it are at times drawn up among the red.

The genuine black Coral grows to rocks, and other solid bodies, by a broad and thick base; from this it rises up usually in a single stem, of the thickness of a man's finger; this runs up single for three inches, or thereabout, and then sends off a branch, and usually three or four more, at different distances, higher up: these do not often send out other branches, but run single their whole length, which is often two inches, or more. The whole surface of this Coral is naturally striated, but this is usually polished off, before it is offered to sale. It is as heavy and as hard as the red Coral, and is of a fine shining black colour. When broken it appears of as compact a texture as the red: It is sometimes dragged up on the coasts of the Mediterranean; we sometimes also meet with fragments of it among the sea plants sent over for sale. Ray tells us he often met with it among the Italian naturalists; and the king of Prussia, we are told, at this time has a fine shrub of it: Boerhaave also gives us an account of a specimen he had of it, which is still at Leyden.

4. *Corallum album geniculatum.* *Geniculated white Coral.*

This rises from a broad and irregular base, considerably thick, and of a white colour. The stem is usually single at the base, and divides afterwards into several branches: the main stalk is usually of the thickness of a man's thumb, or more, and the height of the whole plant not less than a foot and a half. Its branches are composed of oblong segments, or joints, half an inch or more in length, so that they represent the flock of the common horse-mill. The whole plant is of a yellowish-white colour, striated on the surface, and of a tolerably solid texture, between that of the madreporæ and that of the common white Coral.

This is found on the shores of the East Indies. Boerhaave calls it *Corallum album geniculatum*; and Clusius, *Hippuris faxes*.

The Corals are so much alike in their growth, that the other species, after the descriptions of these, will easily be known by their names. They are, 1. The little, white Coral, brittle and ramose. 2. The thin, branched, brachiated, white Coral. 3. The brownish-grey Coral of Spain. 4. The thin, brittle, tufted, white Coral. 5. The slender, very-much branched, little Coral. 6. The white, digitated, flat-branched Coral. 7. The great yellowish Coral. 8. The great, white, ramose Coral, with red tops. 9. The brittle, very ramose, yellowish Coral. 10. The little, mossy, brittle, white Coral, growing in thick tufts. 11. The little, geniculated, white Coral, with white, multiseid tops. 12. The white, capillaceous, geniculated Coral, with branched tops. 13. The capillaceous, pale-red, geniculated Coral, with branched tops. 14. The red, geniculated Coral, with capillaceous branches and ramose tops. The four last are very small, but very beautiful Corals. Authors have described many more species under the name of Corals, as the stellate and oculated Corals, so called from the figures of stars and eyes on their surfaces; but these are properly madreporæ, and have been already described under that genus.

SUBMARINES.

Class the First. Genus the Ninth.

CORALLINA.

CORALLINA is a genus of Submarines, consisting of stalks and branches, often beautifully ramified, and composed of joints of an oblong figure, inserted into one another. The greater part of these are gritty, and of a Coral-like matter, but nature varies from this in some of the species, which are of a softer substance.

1. *Corallina segmentis longioribus.*
Corallina with long segments.

This is a bushy plant, much divided in it's branches, and usually growing in great clusters together. It rises to two or three inches in height, and often extends to as much in diameter in the whole cluster. The main stalk is of the thickness of a small pack-thread, and is composed of a multitude of joints or segments, which are twice as long as they are thick, and are all regularly figured, being thicker at one end, and smaller at the other: the smaller end grows downwards, and is inserted into the larger end of the joint below; so that the whole plant consists as it were, of a series of cups, with narrow mouths, and narrower bottoms, inserted into one another. There grow many branches from the main stock, and these are sometimes ramified again, but they are always short. The whole plant is sometimes of a white, sometimes of a greyish, and sometimes of a greenish, reddish, or yellowish colour. It consists of a gritty matter, and is easily rubbed to powder: it's taste is very nauseous. It grows to stones, shells, and all other solid substances, under water, and usually in thick tufts, or clusters. Casalpini says it is soft, while in the water, and grows stony on being exposed to the air; but he errs in this. It is common about our own coasts. Authors have called it *Corallina Anglica*, and *Corallina officinarum*. It has been long celebrated for its virtue against worms, and is given, from ten grains to two scruples for a dose, with very good success.

2. *Corallina pennata denticulata.*
The pennated and denticulated Coralline.

This is a very beautiful and regular little plant. It grows to the height of two or three inches, and it's utmost breadth is about three quarters of an inch. It rises with a single stem or stalk, which continues undivided to the top, and from which there issue a number of branches, disposed in a very regular order: they are single, and the longest are somewhat more than a third of an inch long; these are in the middle of the plant, and from this they are gradually shorter to the bottom, and to the top they are placed in the same plane opposite to one another, or nearly so, so that the whole plant has much the appearance of some of the pennated leaves. The main stalk and the branches are all of the same structure, composed of short joints, and those disposed in such a manner, that the branches appear denticulated. The whole plant is very rigid, and of a pale-brown colour. It grows from a small, flat base, and usually single. It is frequent about our own coasts, growing on small stones, and often on oyster-shells. Authors have supposed it to resemble the fir-tree in it's regular growth, and have thence called it *Abies marina Belgica*. Tournefort calls it *Corallina marina abietis forma*; and C. Bauhine, *Musculus marinus filicis folio*.

3. *Corallina ramulis falcatis.*
The falcated Coralline.

This is an extremely elegant little plant: it rises to four or five inches height, but it's stalk is so weak that it is scarce able to support itself erect at that height. It usually grows single, and is branched from top to bottom. The main stalk sends out a branch or two every half inch, or at nearer distances; and these ramify into a multitude of others, which are all much of the same length, and all of them bend at their ends in such

such manner as to resemble a reaper's sickle. The main stalk is rigid and firm, though very slender; the branches are composed of short joints, so disposed, as to give the whole a denticulated figure, and in the axis of the denticulations there are frequently found a kind of oval bodies, hollow, and striated transversely; the same sort of capsules are also found on many of the other species, but their use is not yet discovered. The whole plant is of a pale-brown colour. It grows to oyster-shells, and other marine bodies, sometimes to the other sea-plants, and is common about our own coasts. Plukenet calls it *Corallina mukōsa pennata ramulis et capillamentis falcatis*; and Johnson, *Mucus marinus pennatus*.

4. *Corallina simplex cirrata*.

Simple cirrated Coralline.

This is a very singular species: it consists of a single stalk, of three, four, or more inches in length, neither divided, nor sending out any branches, but continuing simple from the base to the summit. It is composed of a multitude of short, cylindric joints, and at the head of every joint it has five little cirri, looking like the rudiments of hairs. The stalk itself is not larger than a thick horse-hair, and is somewhat rigid, and of a brown colour. There generally grow a great multitude together, so that they support one another, but, otherwise, their length is almost too much for their diameter. The stalk has a cavity running all the way up it, and in the whole resembles nothing so much as the horn of a lobster, whence it has been called, by the generality of writers, *Corallina astaci corniculorum æmuli*. It is frequent on our own coasts, and sometimes found on oyster-shells, as many other of the Corallines are.

After the description of these four species, the names alone will be sufficient to distinguish the others. They are, 1. The small-branched Coralline, with round capsules at the indentings. 2. The small, snow-white, branched Coralline. 3. The capillaceous, multifid Coralline, called the Fine-haired sea-moss. 4. The tall, white, capillaceous, leaved Coralline. 5. The round-jointed, soft, branched Coralline. 6. The purple, compressed Coralline. 7. The branched, cirrated Coralline. 8. The broad, denticulated Coralline. 9. The branched Coralline, with the denticles in two rows, turned the same way. 10. The thick-stalked coarse Coralline. 11. The erect, very-much branched, silvery Coralline. 12. The procumbent, denticulated, branched Coralline. 13. The little, creeping, denticulated Coralline. 14. The dwarf, erect, ramose, denticulated Coralline. 15. The simple-denticulated Coralline. 16. The hollow-jointed Coralline. 17. The capillary, hollow-jointed Coralline. 18. The threaded, short-jointed, hollow Coralline. 19. The purple, narrow-leaved Coralline. 20. The black, multifid Coralline. 21. The green, multifid Coralline: both these become white with lying on the shores, but they even then are evidently different from any other species. 22. The dodder Coralline. 23. The abrotanum, leaved Coralline. 24. The elegant, silvery, fine-divided Coralline.

Linnaeus has figured many of these Corallines under the name of receptacles of insects, and supposes them not of vegetable origin. The French have lately, also, extended this doctrine to the corals, and many other of the sea-plants, all of which they make not to be vegetables, but cases made by insects. We do not find this, however, sufficiently proved at present, to authorise the throwing this set of bodies out of the vegetable world. In a work where a general history of plants is to be comprised in a small volume, we have no room for controversy; but this is certain, that many of the species, called by these authors the cases made by insects, may be proved to be vegetables, as much as daisies or lillies are so. We allow that some inaccurate authors may have described cases of insects under the name of plants, and that sea insects may inhabit sea-plants, as the hexapodes of beetles, &c. do trees, or other insects (the mineurs de feuilles of Reaumur, &c.) do plants: but we are not, therefore, for supposing all sea-plants to be cases of insects, nor all of them even to afford niduses for animals, because some of them do so.

SUBMARINES.

SUBMARINES.

Class the First. Genus the Tenth.

ALCYONIUM.

ALCYONIUM is a genus of Submarines, consisting of a rigid, fibrous matter, disposed in various forms, but always laid together in a lax manner, so as to be in most species compressible. Sometimes covered with a crust of it's own matter, more closely arranged, and forming a hard crust for the rest, but more often naked; and in some of the species, the least resembling a plant of any thing of the Submarine class, in it's external appearance. There is no term in botany that has been more abused, or employed in so many improper senses, as this Alcyonium. Authors have described many things which are not distinct vegetables under it; some of them really nidules of insects, some of them only congeries of the fibrous matter of other plants. We are not for this reason however to conclude, that there are no Alcyonia truly vegetable, of distinct and determinate kinds.

1. *Alcyonium divaricatum.**Divaricated Alcyonium.*

This grows to the rocks or other solid bodies under water, by a broad and thick base, composed of a multitude of fibres variously interwoven and entangled. From this base there arise two or three branches, each spreading out into several ramifications; the whole branches are often eight or ten inches long. It is rounded at the bottom, and an inch and half or more in diameter; but, as it branches out, it becomes flat; many of the ramifications are two inches broad, and not half an inch thick, and the whole has something of the rude figure of an elk's-horn. It is of a brown colour, and of a somewhat rigid, yet compressible matter, and is all formed, like the base, of a number of thready filaments, strangely interwoven and entangled, and often coalescing together; the ramifications from the main branch often coalesce where they meet. The constituent matter seems something of a middle nature, between that of the Eel-grass, and that of the Sponges.

This species is not uncommon on the coasts of America. Clusius calls it Alcyonium monstrosum; and C. Bauhine, Alcyonium cervi cornua refers.

2. *Alcyonium coralliforme.**Coral-like Alcyonium.*

This is an extremely elegant and beautiful plant, and is the most singular in its appearance of any thing of this kind; at a distance it perfectly resembles a shrub of coral, but that it is of a yellowish colour; but, when examined, it is found to be composed merely of fibrous and ramose capillaments, wonderfully arranged into that general form, and is so extremely light, that the largest pieces of it have scarce any sensible weight in the hand. It rises from a thick and coarse base, formed of a multitude of fibres, strangely entangled together and extending themselves, in a cake of several inches diameter, over stones or rocks; from this it rises with a main trunk of an inch or two in diameter, and this divides into several ramifications, each of which afterwards sends off its several branches. These are all round in figure, though composed only of fibres standing at a considerable distance from one another, and so remarkably arranged and terminated, that they all end in the circular circumference allotted to the branches. The whole plant is of a yellow colour, and the branches are somewhat compressible, though the fibres they are composed of are considerably rigid. It is frequent on the coasts of the East Indies, where it is thrown up by the waves. It naturally grows under twenty or thirty feet water. Many of our collectors of natural bodies have it in their museums, where they call it the wire sponge, or sponge coral.

3. *Alcyonium rotundum cavum.*
Round hollow Alcyonium.

This is a very singular species, tho' less beautiful than the two former. It grows to the rocks by a circular rim, surrounded with a multitude of fibres. The rim is about an eighth of an inch broad; the circle it makes is often three quarters of an inch in diameter, and the internal space has no part of the plant annexed to it. From this circular base the plant extends itself to the bigness of a man's fist, but the hollow still continues. The whole consists only of a crust of a sixth of an inch, or thereabout, in thickness, which is composed of rigid fibres, arising from the circular base, and running through the whole plant, variously entangled with one another, and frequently meeting and coalescing together; these fibres are so numerous, and so well connected by their inoculations, that they form a continuous substance close toward the surface, but more lax within, and of a middle degree of density between the two species already described. The cavity contained within this globular case is large, and is always full of sea-water. The plant is sometimes of a greenish, but more usually of a brownish yellow colour; but it grows white, on being beat about on the shore. Imperatus describes this under the name of *Aurantium marinum*; others call it *Bursa marina*, and *Pannum marinum*. It is frequent about the coasts of the Mediterranean.

4. *Alcyonium ovatum cortice duriori.*
The oval Alcyonium with a hard coat.

This species somewhat resembles the former in shape, but it differs greatly in its structure. It rises from a circular base, and usually there grows from this a cylindric neck, short and thick, which from its top expands into an oval figure. The whole plant, as in the former species, is composed of rigid fibres, variously entangled one with another, but they are laid less close together. The surface is covered with a kind of bark, formed of the same fibres, more closely interwoven, and frequently inoculating and cohering one with another. This crust is but thin, but all there is of the fibrous substance, that composes the plant, is propagated from it toward the center. The colour of the whole is a brownish grey, its size very uncertain. I have seen mosses of it twice as big as a man's head, but the bigness of an orange is its more usual size. It is often thrown up on the coasts of Italy. It sometimes grows to stones, sometimes to other sea plants. Imperatus has described it under the name of *Alcyonium tuberosum*; and C. Bauhine under that of *Alcyonium forma alicujus ficus*.

The other species of the *Alcyonium*, properly so called, will be understood sufficiently by their names, after these descriptions of the more singular ones. They are, 1. The harder, spongy, and porous tuberos *Alcyonium*. 2. The funnel-shaped *Alcyonium*. 3. The soft branched *Alcyonium*. 4. The great, hard, arborescent *Alcyonium*. 5. The yellowish, ramose, and softer *Alcyonium*. 6. The ramose scabrous *Alcyonium*.

SUBMARINES.

Class the Second. Genus the First.
Those of a firm texture, tough and elastic.

CAMPYLUM.

CAMPYLUM is a genus of Submarines, consisting of a tough, flexible matter, usually formed into a kind of shrubby appearance, and covered with a hard or gritty crust, in which the fructification seems to be placed in little granules with open tops. The *Campylia* agree with the corals, in the having this kind of crust for this purpose; they differ from them in their wanting the stony hardness, which characterises the others. The botanical writers in general have agreed to arrange these plants into a genus by themselves, but they have called them by generic names, not properly expressive of them. Tournefort calls them, *Lithophyta*, or stony plants, a name

name that any body will perceive belongs not properly to them; but to the corals. Linnaeus calls them Lithoxyla, expressing them to be partly of a woody, partly of a stony nature; and Boerhaave, according to the hardness of their crusts, arranges them into two genera, under the names of Ceratophyta and Titanoceratophyta. As what has been meant to be expressed by these general names, has been principally the flexible texture of the plants, which some have expressed by resembling it to that of horn, others to that of wood, neither of which substances the plants themselves truly resemble; it seems more proper to call them by a name which expresses only their being flexible, without conveying an idea of a resemblance which does not exist. Linnaeus seems not to have been aware, that his general character of the Lithoxyla took in the corals, which he afterwards makes another genus.

1. *Campylum coralliforme.*
Coral-like Campylum.

This is the plant which we usually meet with, under the name of black coral. It grows from a flat base, of the thickness of a shilling, which extends itself for two or three inches over the rocks, and assumes the form of the part of them it grows on. From this base there usually rises a single stem, sometimes more, of the thickness of a man's little finger. This runs up single three or four inches, and then begins to divaricate and send off branches. The height of the whole plant is from eight inches to a foot or more, its branches seldom send out any other smaller ones; so that the whole represents very well a shrub of red coral, except that it is less thick in proportion to its height. Its colour is a dark brown, approaching to black; its surface is not perfectly smooth: it is extremely flexible, indeed it will not be broken without considerable difficulty. It is frequently found in this naked state, but, where perfect, it has a whitish crust, friable, and composed of a gritty matter extended over its surface; this is of the thickness of a shilling or more, and is beautifully marked with cavities and openings. Most of the botanical writers have described this species. Tournefort calls it, *Lithophyton nigrum arborescens*; and others, *Corallium nigrum*, and *Antipathes*. It is common about the shores of the Bermudas, and in many other places.

2. *Campylum ramosissimum fruticiforme.*
The shrub-like extremely branched Campylum

This is an extremely elegant plant. It grows to three or four feet high, and extends its branches to more than that measure in diameter. It rises from a broad and thick base, affixed to some rock or large stone, and conforming itself to its shape. From this there grows a stem or trunk of an inch and half or more in diameter; this rises single to the height of four or five inches, and then it begins to send out branches from space to space on every side; the largest of these are sometimes as thick as a man's thumb at the base, and a foot and half or more in length: these branches send off others, and those still send out more, so that the whole plant looks extremely bushy; the extremities of all the branches are long and slender filaments. While the plant is in the water, these extend themselves every way, and make a very beautiful appearance; but, when taken out, they droop with their own weight. The plant is of a tough, flexible matter, like the others of this class, and is, when perfect, covered with a crust, formed of a gritty matter, like that of the others, but of a very beautiful red colour, so that it adds greatly to the beauty of the plant. It grows about the Cape of Good Hope, near the island of Ceylon, and in some parts of the American seas. Most of the botanical writers have described it. Clusius calls it, *Frutex marinus elegantissimus*; and C. Baubine, *Corallina cortice reticulato purpurascens*.

3. *Campylum ramosum reticulare.*
Branched reticulated Campylum.

This is another elegant species, very singular in its manner of growing. It rises from a large, flat, and very thick base. Its trunk is an inch or two in diameter. It is single to about five or six inches in height, but there divaricates into two branches, which soon after divide again, and send out a vast number of smaller ramifications.

cations. The plant grows to three or four feet high, and is very singular in this, that the branches do not go off every way from it, but all stand in the same plane, so as to make it quite flat and thin, though extended to a great breadth. The smaller ramifications are extremely numerous, and stand very close; they meet continually, and, wherever they do so, they inoscule with one another, so as to form in the whole a kind of net-work, with holes or meshes of different size. The plant is composed of a tough, firm, and flexible matter, and is covered with a beautiful purplish crust of a gritty substance, with a multitude of papillæ and holes in it. The extremities of the ramifications are extremely fine and tender. This species is frequent about the shores of the island of Ceylon, and in many parts of the East. The hard crust easily breaks off from this as well as the other species of this genus, so that we frequently meet with them either in part or entirely naked. Most of the botanical writers have described it. Clusius calls it, *Planta marina retiformis*; and Tournefort, *Lithophyllum reticulatum aliud purpuraceum*.

After the descriptions of these, which are the most singular species of the *Campylia*, the others will be easily distinguished merely by their names: They are, 1. The branched *Campylum*, with a white crust. 2. The less branched *Campylum*, with a purple crust. 3. The smaller *Campylum*, with a yellow, punctated crust. 4. The nodose *Campylum*, with a white crust. 5. The grey rugose *Campylum*, with a warty crust. 6. The branched *Campylum*, with a thin, smooth, yellow crust. 7. The great ramose *Campylum*, with a grey crust. 8. The great *Campylum*, with a blackish nodose crust. 9. The polypody-like *Campylum*, with a white crust. 10. The flat branched *Campylum*, with a greyish crust. 11. The black hairy *Campylum*. 12. The whitish hairy *Campylum*. 13. The convoluted, black, setaceous *Campylum*. 14. The thick-branched, variegated, white and yellow crusted *Campylum*. 15. The erect, ramose, tamarisk-like *Campylum*. 16. The nodose and corniculate *Campylum*. 17. The prickly fennel-like *Campylum*. 18. The flat-branched reticulated *Campylum*. 19. The abrotanum leaved white crusted *Campylum*. 20. The cypress-like *Campylum*. 21. The slender branched *Campylum*, with a red and yellow crust.

SUBMARINES.

Class the Second. Genus the Second.

SPONGIA.

SPONGIA is a genus of Submarines, consisting of a soft, tough, and elastic matter, formed usually into rude mosses of a cavernous structure, and having very little of the appearance of plants.

Upon a nice examination, these plants appear to be composed of capillary fibres, which are hollow, and are implicated in an amazing manner, and surrounded by thin membranes, which arrange them into a cellular form. The structure and constituent matter of the sponge renders it the fittest of all bodies to imbibe a great quantity of any fluid, and on a strong pressure to part with almost the whole quantity again.

1. *Spongia cellulis majusculis.*

Sponge with moderately large boles.

This is the sponge in common use with us on many occasions. It is a mere shapeless mass, growing under water: it is affixed to the rocks by a broad and firm base, and thence expands itself every way into a large and thick irregular lump, consisting of a tough matter, arranged into large pores. Its colour is a pale brown. It is frequent on the coasts of the Mediterranean, and in many other places; and, wherever it lies so that it can be easily come at, is taken up, and proves a very profitable branch of commerce. Tournefort calls this species *Spongia ad usum præstantissima foraminibus exiguis*; but there are other species, the foramina of which are smaller.

2. *Spongia*

2. *Spongia cellulis maximis.*
Sponge with large cavities.

This is distinguishable from the former species, as well by the largeness of it's cells, as by it's general appearance. The former is usually found in masses as thick as they are long; this, on the contrary, is almost always met with in flat or hollowed pieces: it usually adheres to the rocks by a broad base, from whence it expands every way in a circular, or less regular form, to the extent of a foot or two in diameter, and with three or four inches of thickness: It frequently is met with (smaller than this, sometimes much larger. It sometimes expands itself quite flat, sometimes it is umbilicated, rising every way from the root, so as to form a kind of basin; and sometimes the base rises to an inch or more in height, and the body of the sponge thence expands itself into a hollow form, largest at top, and smaller at bottom: in whichever of these states it is found, it's holes are always much larger than those of the other, and it's substance coarser. Authors have made three species of it in it's three principal varieties of form: when quite flat, it is the *Spongia compressa magna* of Bauhine, &c. when in it's hollow form, without a pedicle, it is the *Spongia ingens anomala pelvim referens* of Boerhaave; and, when hollow with a pedicle, it is the *Spongia infundibuliformis* of Clusius, and of almost all the authors since his time.

It is frequent in all these appearances about the Cape of Good-Hope, and in some of the seas nearer home: it is often brought to us instead of the first kind, but it is not nearly so good.

3. *Spongia cellulis minimis ramosa.*
Branched Sponge with very small cellules.

This is of a very different appearance from either of the former; it is long, and divided into branches. It usually grows to some stone by a firm and not very broad base, from which it rises with two or three branches, of the thickness of a finger; these each of them divide into several others, and those are sometimes branched again: the several ramifications are roundish, but somewhat flattened; they are of the same substance with the other Sponges, but more densely put together, and the cavities much smaller. The colour is a pale brown. The length of the whole plant is often ten or twelve inches. It grows on rocks about the shores of Italy, and in many other places. Tournefort, and others, have described it under the name of *Spongia ramosa*; Lobel calls it *Conserve marinæ* genus.

This species sometimes grows single, not branched, and extends to a great length. In this state Plumier has described it under the name of *Spongia Americana longissima funiculo similis*; and in like manner the first species, in it's several variety of shapes, has been described as several species, under the names of *Spongia tubo similis*, *Spongia favo similis*, *Spongia globosa*, and the like.

The species of Sponges have, indeed, been increased beyond all bounds by the error of taking varieties for distinct kinds: the only real distinct species beside those already described are, 1. The shrubby, branched Sponge, with moderately large holes. 2. The branched, river Sponge. 3. The hairy Sponge; and, 4. The woolly Sponge.

SUBMARINES.

Class the Second. Genus the Third.

FUCUS.

FUCUS is a genus of Submarines, consisting of a tough matter, formed into a kind of leaves, which are flat, and are variously divaricated, sometimes dichotomously, sometimes perfectly irregularly; and which have some appearance of fructification, in punctuated tubercles, covering oblong vesicles, taken by Linnæus to be male flowers; and smooth, roundish vesicles, hollow, and interwoven with filaments, which appear to him to be female flowers. Mr de Reaumur has the honour of being the discoverer of this fructification, which Linnæus has from him, and does him due honour for, but there require further observations to confirm it.

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1. *Fucus*

1. *Fucus latifolia serrata*.
Broad-leaved, serrated *Fucus*.

This is the most common of all the species with us: it grows to the height of six or eight inches, sometimes more, and its leaves are near half an inch in breadth. It rises immediately in form of the leaf, without any pedicle, and of the breadth of a finger; as this leaf rises in height, it divaricates into two parts, and each of these into two more, and so on, till a great number of ramifications are produced, and all of them dichotomously, or by pairs. The whole plant is serrated at the edges, and is of a dusky-brownish colour, very tough and smooth on the surface. Its extremities frequently swell out into a sort of pods, rough on the outside, and of an oblong figure; and, beside these, it has a number of air-bladders, of a round figure, growing on the surface of the leaves, which burst with a noise on being trod upon.

It grows with us on all the coasts in vast abundance, covering most of the stones that chance to lie on the shore. The botanical writers have described it under the name of *Quercus marina vulgaris*, *Alga vulgaris*, and *Fucus*. It differs considerably in its form, according to the depth of water, and other circumstances, and has, in these several states, been described under the names of several different species. Dillenius has enumerated ten or a dozen of these varieties, described by others under the name of different species, in his edition of Ray's *Synopsis*.

2. *Fucus tenuifolia dentata*.
Narrow-leaved, dentated *Fucus*.

This is a much more beautiful plant than the former. It rises from a flat base, affixed to rocks or stones, with two or three, sometimes more, long and narrow leaves. It grows to twelve or fifteen inches in length, and is of a deep brown colour: Its first shoot is strait, and of the breadth of a straw; this soon divides, into several ramifications, and these subdivide again and again into several others; none of them are broader than the first, and they are all very sharply indented about the edges, the points made by the indenting terminating in a kind of weak thorns.

This species is frequent about our own shores. Ray describes it under the name of *Fucus tenuifolia foliis dentatis*. It sometimes swells into the same kind of vesicles at the end of the ramifications with the former, but more rarely.

3. *Fucus lato et tenui folio*.
The broad and thin-leaved *Fucus*.

This is a very elegant, but a very irregular species in its manner of growing. It rises from a flat base, with a narrow and thin leaf; this grows wider, as it extends in length, and soon begins to divaricate into several parts, but that not in a dichotomous manner. It grows to four or five inches in height; the segments toward the end are narrow, and sometimes, though rarely, they are formed into a kind of pods, like those of the common *Fucus*. The whole plant is of a tenderer texture than most of the *Fuci*, and is sometimes of a purplish, sometimes of a greenish, and sometimes of a whitish colour. It varies so much in its manner of growing, that it has been often mistaken in its several states for different species. It is common about our own shores. Ray calls it *Fucus membranaceus ceranoides varie dissectus*, others, *Fucus latifolius*.

The other species of *Fucus* are very numerous in nature, and much more so in the writings of authors, a great many of them, in their several varieties, having been described as distinct species. There is so much similarity in the general form and texture of these plants, however, that the other real species will easily be distinguished by their names. The more singular and more certainly distinct are, 1. The purple, narrow *Fucus*, called by the Irish *daleish*, and eaten as a remedy against worms. 2. The grey, narrow-leaved *Fucus*. 3. The fine-divided and variegated *Fucus* of the Cape of Good Hope. 4. The peacock-feathered *Fucus*. 5. The curled, variegated *Fucus*. 6. The long, narrow, and thick-leaved *Fucus*. 7. The narrow-leaved, round vesicled *Fucus*, called the sea-lentil. 8. The narrow-leaved *Fucus*, with long vesicles. 9. The heath-leaved *Fucus*. 10. The red-rattle-leaved *Fucus*. 11. The fœniculaceous *Fucus*. 12. The abrotanum-leaved *Fucus*. 13. The spongy and nodose *Fucus*. 14. The narrow-

narrow-leaved spiral or twisted Fucus. 15. The broader-leaved, larger, spiral Fucus. 16. The dwarf, broad-leaved, serrated Fucus. 17. The long, narrow, and thick-leaved Fucus. 18. The small, membranaceous, greenish Fucus, with extremely divaricated extremities. 19. The purple, membranaceous costated Fucus. 20. The tender, graft-leaved, dichotomous Fucus. 21. The corallopus-leaved Fucus. 22. The broad, Scotch, ciliate Fucus. 23. The purple Fucus, with ligulated edges. 24. The broad-leaved, pinnated Fucus. 25. The elegantly-divided Fucus, with broader segments. 26. The scarlet, pennated, and variously-divided Fucus. 27. The purple, plumose Fucus. 28. The dodder-like Fucus. 29. The simple, long, and broad-leaved Fucus, called the sea-beet. 30. The thick, long, and broad-leaved Fucus. 31. The Fucus with a leaf like the lepathum sanguineum. 32. The hart's-tongue-leaved Fucus. 33. The simple, long, broad, and very thin-leaved Fucus; and, 34. The variously-divided, long-leaved Fucus.

SUBMARINES.

Class the Third. Genus the Second.

STRONGYLUM.

STRONGYLUM is a genus of Submarines, consisting of the same tough and firm matter with the Fucus, but formed into branches and ramifications of a rounded, not of a flat figure. There has not been any part of fructification ever yet observed in any of these plants. They have been used to be confounded with the Fucus, and called Fuci cauliculi teretibus; but this has occasioned great mistakes in some writers, and the repetition of many unnecessary words in others.

1. *Strongylium simplex cavum.*

The simple, hollow Strongylium.

This is a very singular plant: it consists only of a long and slender cylindric body, resembling a packthread. It rises from a small, flat base, and is thinner near the base than in the middle, and grows thinner again as it approaches the other extremity. It's greatest thickness seldom exceeds an eighth of an inch in diameter, but it's length is often two or three yards. It is hollow within, and full of sea-water, and there are many membranaceous divisions placed across the cavity, and forming it into a number of cells. Its colour is a dark-brown, its substance that of the tenderer of the Fuci. It is found on our own shores, growing to little stools. C. Bauhine calls it *Alga nigro capillacea folio*; and Boerhaave, *Filum marinum Germanicum*. Ray calls it *Fucus chordam referens, teres, praelongus*; but it is very evident that it has nothing of the structure of the Fucus, nor any thing of the appearance they carry of fructification.

2. *Strongylium ramosum, dichotomum, crassum.*

Thick-branched, dichotomous Strongylium.

This is a very singular little plant. It grows to three or four inches high, and extends its ramifications to as much or more in diameter. It rises from a broad, flat base, affixed to some shell or pebble; from this there grow three or four stalks, round, of a blackish colour, and as thick as a small packthread; each of these soon divides into two parts, and each of those divisions divide, and subdivide again, but always in the dichotomous manner, till of the whole there is formed a thick cluster; the branches grow smaller all the way, and their segments, toward the extremities, are short, and terminate in points: this gives them an odd, forked look. The whole plant is very firm and tough, and is not easily pulled up from its base. It is very frequent about our own shores. J. Bauhine calls it *Fucus maritimus forcatellæ lumbicalis species*; and Ray, *Fucus parvus segmeosis praelongis, teretibus, acutis*.

3. *Strongylium tenue dichotomum.*

Thin, dichotomous Strongylium.

This is a very elegant little plant. It grows from a small, flat base, fixed to a shell, pebble, or other solid body; from this it usually rises with a single stalk, which is of the

the thickness of a large horse-hair; this is divided into two parts soon after it rises from the base, and each of these are divided again, and their divisions still further divaricated, always in the dichotomous order. The whole plant is of a pale yellow colour, and of a tough texture. It grows to about three inches in height, and, what is singular, its branches are all the way of the same thickness to the top. It is frequent about our own shores: I have met with it abundantly on the Bognor Rocks in Sussex. Plukenet calls it *Fucus trichoides nostras aurei coloris ramulorum apicibus furcatis*.

The other species of *Strongylium* are, 1. The small *Strongylium*, with long, bifid, or trifid extremities. 2. The thick, hairy *Strongylium*. 3. The simple, erect, and short *Strongylium*: This grows to about an inch in height, and is thickest at the base, and smallest at the top. 4. The wind-pipe *Strongylium*; and 5. A large and beautiful *Strongylium*, with very long, bifid extremities. This last grows to two feet, or more, in length, and is of East-Indian origin.

SUBMARINES.

Order the Third. Genus the Third.

A L G A.

A L G A is a genus of Submarines, composed of a tender and herbaceous matter, formed into long, slender, and undivided leaves, resembling those of grass.

1. *Alga longissimo angusto folio.*
The long and narrow-leaved *Alga*.

This is a very singular plant, and has greatly the appearance of some kind of grass. Its base is a hard, woody, thick, and oblong body, resembling a large root. This creeps along the bottom till it often extends to several yards in length, and is covered, in many places, with a number of filaments, which are the remains of decayed leaves. At different distances there arise from this root clusters of leaves, ten, twenty, or more together; they grow from a kind of bulb, or tuberosity, formed of the rotting bases of other leaves, and extend themselves to four feet, or more, in length, though seldom of more than half an inch in breadth. They are very smooth on the surface, and become gradually smaller from the base to the other extremity, where they terminate in a point. They are sometimes of a dusky-green, which seems their natural colour, sometimes reddish or purplish, and sometimes white. The plant is extremely common on all our shores, and on those of most other parts of Europe. Gerard calls it simply *Alga*; the generality of other authors, *Alga angustifolia vitrarinum*, from the Venetian glass-makers using it to pack up their glasses in. Some have burnt it to ashes for making an alkali-salt for glass-making, but in this it is found to be greatly inferior to many other plants, and is now disused.

2. *Alga brevior folio.*
Shorter-leaved *Alga*.

This is a much smaller plant than the former. Its base is a tuberous matter, of the length and thickness of a man's finger, fastened to the ground or bottom by many fibres; from this there rise, at the several joints, clusters of leaves of the same grassy form with those of the former, but much broader in proportion to their length: they seldom exceed six inches in length, and are frequently near half an inch broad. They are of a tender and herbaceous texture, and often of a purplish or brownish colour, though their natural one is a dusky green. This species is frequent about the island of Sheppey, and in many other places on our coasts. Ray calls it *Alga graminea minor*.

3. *Alga angustissimo folio.*
The narrowest-leaved *Alga*.

This in its manner of growth, resembles the others, but is evidently a distinct species; as its leaves are longer than those of the first kind, and hardly a quarter of an inch

Submarines

Pl. 3. Pag. 44



Mycetium 2.



Asteron 2.



Asteron 3.



Mycetopora 2.



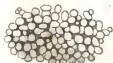
Echinora 3.



Tubularia.



Actinobulium.



Cerata 1.



Corallum 1.



Corallina 1.



Myconium 3.



Campylum 2.



Spongia 1.



Pecten 1.



Stenoglytum 3.



Alga 1.

B. G. de la Roche.



inch in diameter in any part. They float about in the water, and make a very beautiful appearance. Their colour is naturally a pale bluish green, but occasionally it becomes reddish or whitish. Their texture is somewhat more tough than that of the others, and the root slenderer in proportion to its length. This is not a native of England, but it is frequent in the American seas. Sir Hans Sloane has described it under the name of *Alga marina graminea angustissimo folio*.

We meet with accounts in authors of other species of *Alga*, but they seem to be founded upon error. The distinctions of these three are but very slight, but they are certain, regular and permanent, and therefore cannot but be owned as proofs of different species. What we meet with beside these, under the name of different *Algae*, are either one or other of these in a smaller state, or some other accidental variation, mistaken for different species; or they are plants of other genera, called by this name. Tournefort takes in the smooth conservæ of Dillenius into this genus of the *Algae*, but improperly; and we meet with other instances of a like kind in others.

Ray, in his *Synopsis of British plants*, gives an account of seed-vessels with perfect seed in them, growing to the sides of young leaves of the *Alga*'s. I have not met with what he describes, and therefore cannot speak with any certainty about it.



H

FUNGI.

THE
H I S T O R Y
O F
P L A N T S.

P A R T I.

B O O K II.

Of F U N G I.

THE Fungi are a class of plants extremely different from all others. They have indeed so little of the common and general appearance of vegetables, that many have denied them to be such, and contended for their being only excrementitious matter, protruded from decaying vegetables of other kinds. A better philosophy has taught the present age, however, to set aside such opinions; and better opportunities of examining the subjects themselves has taught us that the Fungi, though they have neither the colour or texture of other plants, nor leaves, nor flowers like them, yet have absolute and perfect seeds preceded by the essential parts of other more obvious flowers, though without the ornamental ones; and that these seeds will produce plants like those from which they are collected; and finally, that the vascular structure of Fungus is the same with that of other plants, that their roots are of the same nature with those of other vegetables, and therefore that they are as true plants as any other class of the vegetable tribe, though of a singular figure and construction. The flowers consisting usually each of a single anthera, have been discovered in many species, the seeds in all.

The Fungus is extremely different in figure, and in their manner and place of growth, as well as in many other circumstances; some of them grow on the ground, some on living trees, and many on decayed wood. Some are but of a few days duration, others remain for years. The general manner of growth of the several kinds naturally leads us to arrange them under the four following classes.

Class the First. Fungi which grow horizontally.

Class the Second. Fungi which grow erect, and have pilei or heads.

Class the Third. Fungi which grow erect, and have no heads.

Class the Fourth. Fungi which grow under the surface of the earth in no particular direction.

H

F U N G I.

F U N G I.

*Class the First.**Such as grow in an horizontal direction on trees.**Genus the First.*

A G A R I C U S.

A G A R I C U S is a genus of Fungus's growing in an horizontal direction on trees, lamellated on its under part, and producing distinct male and female flowers on the same plant.

The male flowers have neither calyx nor corolla, but consist each of a single anthera, affixed to the edge of one of the lamellæ.

Of the female flower no part is visible but the seed, which is small and roundish, and adheres to the sides of the same lamellæ.

It has been a custom to call all Fungi, which grow on trees, Agarics, without enquiring into their particular structure. But the different formation of their under part necessarily arranges the several species of these horizontal Fungi into distinct genera, and the name Agaric is only continued as a generical term to these lamellated ones, as having been applied most frequently to them; this, however, it is to be observed, excludes the Fungus, called Agaric in the shops, from the genus so called, that being porous underneath, and consequently a boletus, though its manner of growth has obtained it, in less inquisitive times, the name of an Agaric. We are not fond of changing official names, but must not retain them at the expence of confounding the genera.

1. *Agaricus durior villosus.**Hard hairy Agaric.*

This is a moderately large Agaric, and of an irregularly semicircular form. It grows to the wood on which it is found by a broad base, without any pedicle, and from this extends itself into a figure resembling half, or more than half of a circle, but somewhat too broad for its depth to be regularly of that figure. It is of a tough and firm texture, and is hairy, or rather downy, on its external surface, all that part being covered with a short, thick, and soft fibrous matter. It's principal or ground colour is a pale brown, but it is variegated with circular lines of a great variety of colours, purple, red, brown, and the like. Its under surface is covered with a vast number of extremely thin and fine lamellæ; the flat surfaces of which, especially toward the bottom, are thick, covered with little roundish seeds, and on the edges of which hang rows of little oblong antheræ. This species usually grows single from the body it adheres to, but sometimes it is double, quadruple, or more, fresh plants of it growing from the sides of the old ones. It is very common with us on the stumps of old trees, and sometimes on wrought wood. It is plentiful in a wood beyond Paddington. Dillenius has described it under the name of *Agaricus quercinus lamellatus, coriaceus, villosus*; and Ray under that of *Fungus arboreus holosericeus, inferne lamellatus*.

2. *Agaricus crassus, glaber, margine integerrimo.**Smooth, thick, even edged Agaric.*

This is a larger Agaric than the former. It grows to the stumps of trees by a broad base, which conforms itself to their shape, and adheres extremely firmly to them; from this it extends itself into a kind of semicircular form, but irregular, and generally longer than it is broad. It is usually, when full grown, about four or five inches in diameter, and an inch or more in thickness. It's circumference is somewhat undulated, and it's colour is grey, sometimes with a tinge of brown, sometimes of bluish with it. It's upper side is perfectly smooth, and it's under side covered with fine white lamellæ. These have seeds roundish and very small on them, and oblong antheræ hanging from their edges.

The whole plant is of an ill smell and nauseous taste. It is found with us at the bottom of rotten trees, but not common. J. Bauhine, who found it on old wallnut-trees,

trees, has called it *Fungus auritus juglandium albicans*. I have met with it at the bottom of old beeches, in Charlton forest in Suffolk.

3. *Agaricus undulatus glaber.*
Smooth, undulated Agaric.

This is a smaller species than the former. It seldom exceeds two or three inches in diameter, but it is always moderately thick. It grows from a broad and thick base to a semicircular figure. It's surface is perfectly smooth; it's fleshy part considerably thick, and it's gills large. It's edges are not smooth, as in many of the Agarics, but variously undulated, and as it were curled. It's colour on the upper side is a greyish or bluish, and on the under part white. It is of a softer consistence than many of the other Agarics, and of an agreeable taste and smell, like that of the common esculent mushroom. It is frequent about the roots of trees in Italy, where it is eaten as freely as the common mushroom with us. We have it not in England. Tournefort describes it under the name of *Agaricus præcox albogilvus cristatus*; and Micheli under that of *Agaricum esculentum squammosum glabrum superne, obscurum, inferne albidum lamellatum*.

The other species of Agaric will be easily distinguished by their names; they are, 1. The lobated Agaric. 2. The little, hairy, thin Agaric. 3. The hard Agaric, with reddish lamellæ. 4. The little, yellow, smooth Agaric. 5. The yellow, smooth, large, esculent Agaric. 6. The hair Agaric. 7. The squammosus Agaric, with cartilaginous lamellæ. 8. The great bluish squammosus Agaric. 9. The hairy, lobated Agaric. 10. The white, smooth, esculent Agaric. 11. The yellow Agaric, with white lamellæ. 12. The brown Agaric, with purple lamellæ. 13. The thick, white, smooth, esculent Agaric. 14. The white, hairy Agaric, with red lamellæ. 15. The undulated hollow Agaric. 16. The reddish, squammosus Agaric. 17. The yellow, spoon-like Agaric. 18. The stinking, yellow, fatty Agaric.

F U N G I.

Class the First. Genus the Second.

P O R I A.

PORIA is a genus of Fungus's growing horizontally, but having it's under-side not formed into lamellæ, but full of little holes or pores; and producing distinct male and female flowers on the same plant. The male flowers have neither calyx, corolla, nor stamina, but consist only of single antheræ of an oblong figure, one or more of which are affixed to the edge of every hole. The female flowers have nothing visible but the seed, which adheres to the inner surface of the tube.

Of the Poriz, some consist of a simple, uniform substance, the under-part of which is perforated to a greater or less depth, and formed into a kind of tubules.

Others consist of two perfectly different substances. The upper one solid, the under one, which is easily separable from it, formed of a multitude of cylindric tubes applied closely and evenly together, so as to represent an uniform substance, pierced with holes as in the others. The flowers of many of the Poriz hang so loosely to the mouths of the tubes, that it is scarce possible to avoid shaking them off in gathering the plant; in others they adhere more firmly, and are easily seen. They are in all of an oblong figure, and the seeds, in all that I have yet examined, are oval and small.

1. *Poria crassior foraminibus parvis rotundis.*
The thick Poriz, with small, round foramina.

This is one of the simple Poriz, whose under-part is pierced for the reception of the seeds. It is a very large and thick Fungus. It adheres to the matter it grows on by a broad base, from which it extends itself into an irregularly semicircular figure; usually somewhat longer than broad, and often nearly as thick as it is long; seldom of less than two or three inches in thickness: it's breadth is from three or four to ten or twelve inches. It is of a very firm and solid substance; smooth on the upper surface,
and

and of a greyish-white colour. It's under surface is at first whitish, but it grows brown in time, and is full of innumerable little holes, on the edges of which hang little oblong anthers, without pedicles, usually four to every hole; and within each are placed a great number of extremely minute oval seeds, adhering fast to the sides, in several circular series. There frequently grow three or four of these plants over one another, sometimes they stand single. They are common with us on old elms, and other trees, and frequently grow to a vast size. Dillenius calls it *Agaricus porofus igniarius fagi*, *superne albus*, *inferne fuscus*; and Ray, *Fungus pedem equinum referens*. The common people in some parts of England dip it in a solution of salt-petre, and dry it again, after which it is an excellent matter to use instead of tinder, to receive the sparks of fire from a flint and steel.

2. *Poria lata rufescens foraminibus majusculis.*

The broad, reddish Poria, with large holes.

This is a large and very singular species. It usually adheres to the substance it grows on by a thick, but not very broad, base, and from this, after it is extended in length for half an inch or more, so as to make a kind of neck, or pedicle, it extends itself into a semicircular form, sometimes simple, sometimes divided into two lobes. It often grows to six or eight inches in diameter, often is smaller; and it's manner of growing with a neck is not certain, for it sometimes extends at once from a broad base into a semicircular figure. It is considerably thick and fleshy, often an inch or two, or more. It's colour on the upper surface is a dusky, ferrugineous red; when cut into, it is more red, and it's juice is of a blood colour. It is of the number of those *Poriae* whose under-part easily separates from the upper. It is of a dusky-yellowish colour, and is full of moderately large holes, or, more properly, it is composed of a number of pipes, or tubes, arranged together, whose open end gives this representation; at the mouths of these holes there hang small anthers, but what number to each cannot be easily determined, because they fall off on the least flaking of the plant. The inside of each tube affords many series of fine, small, oblong seeds.

The plant is of the excellent kind, though not eaten with us. It's smell is agreeable, it's taste that of the common mushroom, but richer. It is found with us sometimes in woods, growing to the trunks of old trees: I have two or three times met with it in Hornsey-wood in January. Dillenius calls it *Agaricus porofus*, *rubens carnosus hepatis facie*; and Merret, *Fungus hepatis facie, et colore*. It has, indeed, something of the appearance of the liver, and much of it's colour. It grows very common on the chestnut-trees in many parts of Italy, and is sometimes carried to market.

3. *Poria levissima, crassissima, friabilis.*

Light, very thick and friable Poria.

This species is what is called *Agarick* in the shops. It is of the number of those *Poriae* which are of a simple substance, and whose inferior part is pierced full of holes. It is extremely irregular in it's manner of growing, and it equals any of the *Agarics* or *Poriae* in size. It generally adheres to the substance it grows on by a broad and firm base, from which it extends itself to a great breadth and thickness. It's figure is often very irregular, but it usually tends to the semicircular, and is often as thick as it is long or broad. It's colour is grey on the outside, and white as snow within: it's upper surface is smooth, it's lower very irregularly pierced with holes of an oblong and uncertain figure. The flowers we have had no opportunity of seeing, but the *Agaric* in our druggists shops frequently contains a quantity of seeds, which a microscope easily detects, after laying open the tubular cavities. The whole *Fungus* is of a very disagreeable smell, and of a very nauseous taste: it is sweetish, when first taken into the mouth, but afterwards acrid, bitter, and loathsome in the highest degree. It is frequent on the larch-trees in many parts of Europe, and is found on several others. We have it not in England: we have, indeed, a *Poria* with all the external appearance of it, but it is not bitter. Most of the botanical and medical writers have described it under the name of *Agaric*. It was long famous as a purge among the ancients, but, at present, it is quite out of use; it's nauseous taste, and the large quantity of it necessary for a dose, beside it's griping very much in the working, have rendered it not worth notice,

at a time when we have so many gentler and pleasanter medicines that will answer the same purpose.

The species of *Poria*, beside these, are considerably numerous, and authors who have written on these subjects have made them appear much more so, by describing the varieties of the several kinds under the names of distinct species: the most singular, beside those here described, are, 1. The great, yellow, naked, or spongy *Poria*. 2. The curled, or endive-like *Poria*. 3. The white, light, thick *Poria*: this is the species which so nearly resembles the *Agaric* of the shops; it is common on willows about Chelsea. 4. The spreading, thin *Poria*: this grows plant by plant, in a circular form, often spreading to a surprising extent. 5. The great, brown, thick *Poria*. 6. The squamated, variegated *Poria*. 7. The hairy *Poria*, with undulated edges. 8. The fan-shaped *Poria*. 9. The woody, yellow *Poria*. 10. The tuberculose and whitish *Poria*. 11. The thick, esculent, white *Poria*. 12. The esculent, cristated, squamose *Poria*, called by the Italians *Grifole*. 13. The yellow-bottomed, brown *Poria*. 14. The white, fulcated *Poria*. 15. The purple, hairy *Poria*. 16. The sinuous *Poria*. 17. The hairy, yellow *Poria*. 18. The reddish, cartilaginous *Poria*. 19. The whitish, thin, hairy *Poria*.

F U N G I.

Class the First. Genus the Third.

ODONTIA.

O DONTIA is a genus of Fungus's, which grow horizontally, and have their under surface formed into oblong, slender bodies, like teeth; producing male and female flowers in distinct parts of these teeth: the male flowers consist only of antheræ of an oblong figure, affixed to the sides of some of the teeth, and no part of the female flowers are discoverable except the seeds, which are small and oval, and adhere sometimes to the same, and sometimes to different teeth, on the same plants, always to different parts of the surface. The denticuli are of various lengths in the different species, and in the different parts of the same species; and in some they are round, in others flat. Micheli, and some others, have placed among these species some fungus's which have no horizontal top for the teeth to grow from, but consist merely of branched fibres: but these belong to another genus of another order, to be described hereafter.

1. *Odontia villosa denticulis planis.* *The hairy Odontia, with flat teeth.*

This is a very elegant species, and shews the denticulation extremely plainly and distinctly. It rises from an extremely broad base, affixed to some old tree, and has there it's greatest diameter. It does not extend into breadth, after it grows from the base, but is continued from it in a semicircular form, it's diameter decreasing all the way to the extremity. There generally grow three or four plants of it near one another, often more. It's size is two or three inches in breadth at the base, and a little less than that in length. It's upper surface is whitish and hairy, and usually rises into protuberances in some places. It's under surface is formed into a vast number of oblong, flat teeth, considerably large, and standing in several rows, one behind another. On the surfaces of these there may be sometimes seen antheræ, placed in rows, and often small seeds, of an oval figure, irregularly scattered about them. It grows in many parts of Yorkshire and Leicestershire, on old oaks and elms that stand much exposed. Micheli describes it under the name of *Agaricum squammosum album, superne villosum, inferne denticulis longioribus præditum*.

2. *Odontia glabra denticulis latis.* *The smooth Odontia, with broad teeth.*

This is a very beautiful Fungus. It grows by a long and continuous base to some old wood, extending itself, not into a semicircular figure, as most of the others do, but running

running on in length in a surprising manner, and forming a vast flat mass, with undulated edges. It will extend in this manner to three or four feet in length, but seldom stands out further than to two or three inches from the surface: it is seldom above a quarter of an inch thick, often thinner, and sometimes fixes it's back, or, properly, it's upper part, to the wood on which it's base is fixed, so as to form only a kind of crust to it. When loose and free, it's surface is found to be smooth, it's colour a dusky brown, and it's smell and taste very disagreeable. It is very tough and firm, and is, in it's lower part, formed into a vast number of teeth, of an inch long, and of the breadth of a wheat-straw, or more. There are several series of these, standing behind one another, all entire and separate, they are of the same tough structure with the rest of the Fungus, but of a pale rose colour in the middle, and of a beautiful deep-blue at the edges. In February several of the longest of them are covered with a sort of brownish powder, which, when examined, is found to be composed of clusters of the male flowers, or anthers, each of an oblong figure, and each placed separately on the tooth, no sets of them near one another, but all regularly arranged into one congeries, as if they constituted together only one flower. The seeds are very small, and may be seen on the surface of the shorter teeth with the help of a good microscope, almost through the whole summer. Mr Sherard first discovered this beautiful plant growing to the beams of a cellar in Wimbleton: it has since been found in many such places. It is described in the last edition of Ray's Synopsis under the name of *Agaricus coriaceus longissimus, pectinatus inferne divinus*.

3. *Odontia rotundior denticulis subulatis.*
The rounder *Odontia*, with subulated teeth.

This is a small species of *Odontia*; it rarely exceeds the breadth of a half-crown, and hardly equals it in thickness. It grows to the stumps of old trees by a firm base, thick, and not very broad; from this it extends itself into a semicircular figure, often into a much larger part of a complete circle. Several plants of it usually grow over one another at a small distance, and often the branches of a decaying tree are quite surrounded with them; they sometimes stand so close as to injure one another's figure, and sometimes this occasions them to grow very irregularly. Their upper surface is hairy, or downy, and of a brownish grey; their under part is paler, and is formed into a multitude of short teeth: they indeed deserve the name of teeth better than those of any other species, for they are more of their shape, and, indeed, much resemble the short and sharp teeth of some quadrupeds: they are about a fifth of an inch long, and are not flattened, but of a rounded figure, thickest at the base, and, growing gradually smaller to the other extremity, they there terminate in a sharp point. The whole plant has a disagreeable smell, and a nauseous taste. The teeth are often found dusty with the farina in spring, and in summer the seeds may be discovered on the sides of them.

This species is common in our woods, on the branches of old trees, and sometimes on rotteo wood that has been wrought. Micheli calls it *Agaricus squammosum album, superne subhirsutum, inferne pectinatum*. The other species of *Odontia* are, 1. The broad *Odontia*, with a short pedicle at the side. 2. The coriaceous *Odontia*, with white teeth. 3. The purple-teethed *Odontia*. 4. The thin, ground *Odontia*, with long cylindric teeth.

F U N G I

Class the First. Genus the Third.

AMPHITRETIA.

AMPHITRETIA is a genus of Fungus, growing horizontally, or irregularly, and consisting of a light, spongy matter, on every surface of which there are foramina: on the edges of these grow male flowers, consisting only of oblong, single anthers, and within them are lodged very small, oval seeds.

1. *Amphitretia crassior undulata.*
The thick, undulated *Amphitretia*.

This is a large, but shapeless Fungus. It grows by a great base to the bottom of old trees, from which it extends itself every way, often very irregularly, sometimes in a kind of semi-

femircular form. It grows to four or five inches in breadth, and sometimes to two or three in thickness; it's surface is not regular, but often protuberates in several places. It's edges are thinner than the rest, and usually turn up a little. It's whole substance is light and spongy; it's colour white; it, in the whole, much resembles the crumb of new bread, but that it's pores are not so large. It is porous on every part, the upper surface as well as the under being pierced with innumerable little holes, on the edges of which may be sometimes seen a single anthera, and within are usually found several seeds, extremely small and light.

This species is frequent in Charlton-forest in Sussex, in August and September, about the stumps of beech-trees; it sometimes grows from the wood, sometimes from the ground. Micheli has called it *Agaricum album terrestre medullam panis referens*: he had probably only found it growing on the ground.

2. *Amphitretia tenuior durior.*

Thin and somewhat hard Amphitretia.

This is an extremely singular species in it's manner of growth. It always grows to the lower parts of the stalks of plants: it affixes itself to these by a broad flat base, and from this extends itself, not into a femircular form, but every way round the stalk, and afterwards spreads in the same manner both lower and higher, till it forms, at length, a kind of fungous coat round the whole stalk for two or three inches: a part of this sometimes penetrates a little way into the ground, but more usually the whole is, from the surface, to two or three inches high. It is of a black colour, and very spongy substance, but it's utmost thickness, which is usually in the lower part, does not usually exceed a third of an inch; sometimes, indeed, it grows considerably thicker. It's whole external surface, and it's internal surface also, where it does not adhere to the stalk of the plant, are covered with little holes of an irregular figure, on which there may be sometimes seen single antheræ at the edges, and almost always seeds may be found within, on a nice examination. It's whole substance is spongy, but somewhat harder than the former; it's smell and taste very disagreeable. It is not uncommon with us in December and January, about the lower parts of the stalks of such plants as are up at that time, especially in damp woods. Micheli describes it under the name of *Agaricum spongiosum nigrum, linæ plantarum caulis parti adnascens*.

3. *Amphitretia foraminibus maximis.*

Amphitretia with very large holes.

This species grows to the lower parts of the stalks of plants, in the same manner as the former; but it differs greatly from it in it's manner of growth from the base, and in it's general structure. It is a small fungus, rarely exceeding half an inch in diameter, and with that usually having a quarter of an inch in thickness. It grows from a moderately large base into an oblong and irregular form, not surrounding the stalk of the plant, but standing out horizontally from it. Sometimes only a single plant is found, sometimes several together. It's colour is a dusky-white, it's substance very spongy, and it's upper, as well as it's under, surface pierced full of large holes, which penetrate deep into it, and are not round, but flattish, and very irregular. The antheræ, or male flowers, of this I have not been able to discover: the seeds are easily seen in it; they lie in round series on the inside the tubes or holes. It is common about the stalks of plants in many of our woods; it grows near the ground, and is generally buried under the dead leaves which cover the earth in those places. Micheli calls it *Agaricum album spongiosum, bundellæ plerumque adnascens*: he found it at the base of that plant in July in Italy. I have often met with it in January and February in Cane-wood, about the roots of several different plants, under the dead leaves.

4. *Amphitretia tenuis succulenta.*

The thin, succulent Amphitretia.

This is by much the most beautiful of all this genus. It grows to the base or bottom of the stems of little shrubs, and is of a beautiful violet colour. It adheres by a broad base, from which it extends itself into an irregularly femircular form. It's edges are undulated, and often turned up, and it's whole surface uneven. It grows to the size
of

of an inch in diameter, but is seldom thicker than a half-crown piece. It is spongy and succulent, easily compressed, and readily parting with a viscous whitish juice. Both its upper and lower surface are pierced full of small irregular holes, on the surfaces of which hang single, oblong anthers, and within their cavities there are multitudes of small seeds.

These are all the species of *Amphitretia* hitherto known. Micheli has the honour of having discovered the three first; the last I met with this autumn in Richmond-gardens, at the roots of some of the flowering shrubs in the new walks.

F U N G I.

Class the First. Genus the Fourth.

SCINDALMA.

SCINDALMA is a genus of Fungus's, growing horizontally on the barks of trees, and composed of a great number of plates, or flakes, covering one another, all of a semicircular form, and each composed of a multitude of tubules, or short pipes, arranged close together, and adhering firmly to one another by means of an intermediate fungous matter.

1. *Scindalma lamina tenuioribus.*

The thinner-flaked Scindalma.

This is a very large Fungus, and is usually of a semioval or semiorbicular figure. It grows to the barks of old trees, and appears no other than a solid mass of this figure, affixed by its whole base to the bark, and perforated all over its surface with very small holes. When taken off and examined, it is, however, found of a very singular and very regular structure. Its colour is a brownish-grey, its substance considerably hard, and it is much heavier than most of the Fungi; when cut open, it is found to be composed of eight, ten, or more laminae, laid regularly and evenly over one another, and each of the same regular structure. They are each of the thickness of the tenth of an inch, or thereabout, and of a white colour, and tolerably firm texture, though full of holes: held up against the light, each appears like a fine sieve, and, when accurately examined, each is found to have a vast number of holes bored in both surfaces. The whole Fungus grows to five or six inches in breadth, and half as much in thickness. It endures the whole year, indeed many years, but September is the only time in which it is to be found in flower. At this time a light dusty matter may be seen on its surface, which is the anther; and, on cutting it transversely open, the upper surface of every one of the laminae will be found to be covered with the same powder; when examined with a microscope, this powder is found to be composed of oblong granules, one standing on the surface of each aperture or hole; the under surface of the laminae, though equally porous, never has a single anther adhering to it: in the cavity of the tubules is found a fine powder, consisting of oval globules, adhering to the inner surface of the tubes, principally in the lower part: this is the seed. I never saw this species except once in a wood near the late lord Petre's, who with great pleasure observed its structure and fructification with me. It grows to the old trees in that wood in several places. Micheli calls it *Agaricum durum, crassum, asulatum, ilicibus adnascens, griseum*; but its colour with us is rather a pale whitish-brown than grey.

2. *Scindalma laminae crassioribus.*

Thick-flaked Scindalma.

This is a large and coarse Fungus, but of a beautiful white colour. It grows to the bigness of a man's head, and is usually of the figure of half a sphere. It is extremely hard and firm to the touch, and scarce shews any appearance of pores on the surface; when cut open, it is found to be composed of four or five very thick hollow coats, laid closely upon one another. Each of these is pierced with innumerable holes on the upper and under surface, but it is easy to see that these holes do not communicate with one another, but that each of these coats is composed of two series of tubes, meeting, but

not open at their bases. These coats are all of the same pure white colour with the external one, and their perforations are so regular, that they make a very beautiful appearance in autumn. On cutting into this species, there will be found anthers on both the surfaces of every coat; and, in winter, seeds are found in great numbers in every pore or tubule, adhering to the sides in form of a fine powder.

I have only met with this species in one place, which is the wood above mount Sorrel in Leicestershire. There it grows to the old trees of all kinds in considerable plenty. These are all the known species of this very singular genus of Fungus.

FUNG I.

Class the Firse. Genus the Fifth.

STEREUM.

STEREUM is a genus of Fungus's, of a solid and uniform structure, neither divided into lamellæ, nor pierced with holes, either externally or internally, but whose upper and under surfaces are the same, and both apparently smooth and uniform. The fructifications of these Fungus's are produced on the surface, and consist of anthers and seeds.

1. *Stereum tenuius villosum.*

Thin, hairy Stereum.

This is a small but a very beautiful Fungus. It grows to old trees by a broad base, and usually a cluster of the plants grow together. It creeps lengthwise to three or four inches, often more, and sends out from space to space semicircular bodies, of an inch or more in diameter. These sometimes grow single, each from its own distinct base; but more frequently the base is continuous, and extends itself in length, as just observed. The colour is very beautiful, often a deep purple, sometimes a paler, and sometimes yellow. The colour, be it what it will, is always palest about the base of the Fungus, and deeper at the edges, and is usually stronger and deeper on the under side, than on any part of the upper. The base is often whitish; and the whole upper surface in this case is usually variegated, either with purple and white, or with yellow and white. The Fungus is not in any place so thick as a half-crown, in most not so thick as a shilling. It has no pores nor lamellæ on any part, but both its upper and under surfaces are in February and March covered with a mixt powder, part consisting of oblong, and part of roundish granules, which are apparently the first the anthers, the latter the seed. The upper surface is covered with a soft kind of down, which retains these granules of both kinds, much longer than they are found on the other.

This species is frequent on old trees about Chelsea. Dillenius calls it *Agaricus villosus tenuis*, *inferne lavis*. Ray, *Fungus arboreus villosus*, *inferne planus*; and Micheli, *Agaricum Alpinum squammosum membranaceum, superne obscurum & sericeum, inferne rufescens*.

2. *Stereum crassius leve oblongum.*

The thick, smooth, oblong Stereum.

This is one of the most elegant of all the Fungus kind. It rises from a base equal to any part of it in breadth, and usually of a somewhat greater thickness. From this it grows in an horizontal direction, to the length of three, four, or five inches or more. It's breadth is three or four inches, nearly as much as it's length, and it's thickness about a quarter of an inch or more; in all this, however, it varies extremely; it is sometimes much narrower, and much thinner, and sometimes it is almost as thick as broad. It never, however, assumes a semicircular figure, and it's most perfect one seems oblong, broad, and flat. It is perfectly smooth both on the upper and under surfaces, and is of an elegant bright red colour, variegated in a very beautiful manner with black and yellow; these colours are disposed in veins and spots in a beautiful manner, and the whole surface is smooth and glossy. It sometimes grows single, but

but more usually ten or twenty plants of it grow in a cluster, in which case it is very conspicuous.

There is not the smallest pore visible in any part of it; yet at a certain season every year, which is about August, the whole plant is covered with a fine powder, which is evidently composed of two kinds of granules, oblong and round ones: the former are the farina, the latter the seeds.

It grows to the rotten stumps of trees, and to rotten wood of any kind, but it is not very common. I once found above forty plants of it on an old gate-post near Paddington, and have two or three times seen it about the stumps of trees in Chailton forest. Ray calls it, *Agaricus digitatus maximus ex luteo, coccineo, & nigro eleganter variegatus*. Merret, *Fungus corallii rubri colore, multis lineis nigricantibus & maculis luteis insignitus*.

3. *Stereum crassissimum durum.*

Hard and very thick Stereum.

This is a very large Fungus, but has little else remarkable about it. It grows to old trees by a broad and extremely firm base, which often is so well fixed, that a part of the wood is easier pulled away with it, than it is separated. From this base it extends itself irregularly into somewhat of a circular, or partly circular form. We often see it making nearly a whole round, it's base appearing like a kind of very thick and very short pedicle at it's side; often it grows only semicircular, it's base extending so far, as to make the broadest part of it. It's diameter is often eight or ten inches, sometimes more; it's thickness is from two to four or six inches. It is extremely hard and solid, and remains many years; but, when very old, it sometimes cracks on the surface. It's colour is white, sometimes very pure and clear, sometimes brownish or greyish. It's substance is almost woody, it's surface smooth and uniform, with no marks of lamellæ or pores on it. Toward autumn, however, it is found dusty in several parts, and this dusty matter, when examined, is found to be partly the antheræ, partly the seeds, as in the others of this genus. This kind of dust wipes off very easily from them all. This species is very common on old elms and other trees about London. J. Bauhine calls it, *Fungus densus ad ellychnia*; and others, *Fungus ignarius*.

The other species of the Stereum are, 1. The gelatinous, membranous, and sinuated Stereum. 2. The lichen-like villote Stereum. 3. The little white, trilobate Stereum. 4. The little red lobated Stereum. 5. The thick brown Stereum, growing in the fissures of old wood, and called oak leather. 6. The tufted, hollowed, thin Stereum. 7. The blue, lichen-like Stereum. 8. The reddish, thicker lichen-like Stereum. 9. The white, very thin, and dry lichen-like Stereum. 10. The brown, dichotomous, wood Stereum. 11. The yellow, fibrose Stereum. 12. The black, reticulated Stereum. 13. The white, hairy, reticulated Stereum. 14. The fine velvety, greenish Stereum.

F U N G I.

Class the Second.

Such as grow erect, and consist of pedicles crowned with Heads.

Genus the First.

LEPIOTA.

L EPIOTA is a genus of Fungus's, consisting of a pedicle supporting at it's top a head, the under part of which is divided into innumerable thin and fine lamellæ. The Lepiote are the most common of all the species of Fungi. They have with us acquired the name of mushroom, in preference to all the others, and Micheli, who has given peculiar names to the rest, calls these Fungi, as if that name belonged peculiarly to them. The common esculent mushroom is of this kind, and there are almost innumerable others, which approach to it in figure and structure, though they want it's pleasant flavour, all which are of this genus.

The

The fructification of the Lepiotæ is this: they produce male and female flowers on distinct parts of the same plant. The male flowers have no cup or corolla, but consist of a very short stamen, to which is affixed in some species a single anthera, in others four or more. The female flower we can distinguish no part of but the seed. This is extremely minute and round, and in some species stands single, in others in clusters of four or more together. The antheræ are affixed to the edges of the lamellæ, the seeds to both sides of them. Where the male flower consists of a single anthera, the seeds stand single; where there are four antheræ affixed to the same stamen, as is usually the case in the others, the seeds stand in little clusters, four together. If these fructifications of the Lepiotæ were larger and more visible, we should make two, or perhaps more genera, instead of one of them: but where the fructification is so minute, as not to be distinguishable without the help of powerful microscopes, we are not to pay so much regard to it in a work of this nature, where the obvious characters are the proper ones for establishing generic distinctions on.

The lamellæ, in some of these Fungus's, stand very close, in others further asunder; and in some, where a larger distance is necessary for the ripening of the seeds, the lamellæ have little protuberances of a conic figure growing on their sides, which prevent their touching one another, while the seed is ripening, and which wither, as soon as it is fallen. We have called this genus *Lepiota*, from the Greek *λεπτος* a lamella. Some of the Lepiotæ grow single, one stalk only arising from the root; others have several pedicles arising from the same root; and of both these kinds some are simple, each stalk or pedicle running up single, and producing only one head; others are ramose, each pedicle dividing into several stalks, and each stalk having it's peculiar head.

Many of the Lepiotæ have an annular membrane growing from the upper part of the stalk, and joining the edges of the head, while small; this is separated from the head, or else from the stalk, by the expanding of the head. In some species it remains on the stalk, in others it hangs to the edges of the head; but in most it is very tender, and falls soon to pieces, though in others it remains as long as any part of the Fungus.

In some species of the Lepiotæ, the seeds falling from the heads immediately shoot, and produce other perfect Fungus's like the parent; in others they first produce only roots, which grow and spread themselves under the ground to a great extent, and after a year or two shoot up pedicles in abundance, with heads to them. Finally, others shoot at their first falling into perfect Fungi of the same kind, formed in miniature, in a kind of cases or involucri, by the bursting of which afterwards they are allowed to grow up: in some of these species the involucrium perishes, as soon as the plant grows up from it; in others it remains, and grows up with it: in some it remains affixed to the root, in others it's parts are seen on the very summit of the head.

Obvious and distinct as these several characters appear to be, however, they are not to be expected with any degree of certainty: there are no plants which vary so much in their manner of growth as the Lepiotæ. The branched kinds are sometimes found simple, the simple ones sometimes branched, and the annular appendages of the stalk, as well as the remains of the involucri, are sometimes found permanent, sometimes not, on the several individuals of the same species.

The seeds of many of the common Lepiotæ, properly sowed, will produce under the eye their proper species. The first appearance of these is usually the involucrium, containing the plant in miniature, from which it afterwards grows up in its proper form.

1. *Lepiota simplex crassius pediculo longiore.*
The single, thick *Lepiota*, with an oblong pedicle.

This is a moderately large species. Its root is somewhat tuberosus; it's stalk round, and of the thickness of a child's finger. It's head obtusely conic, and of a dull brownish colour. It grows to about four inches in height, and it's head is near two inches in diameter at the base. The lamellæ are of a pale brown. The whole plant is succulent and of a good smell, and is worthy to be received at our tables, though at present not regarded; the stalk is hollow, and there is no annular rim on it. The flowers in this species are single, and the seeds in like manner stand single on the lamellæ. It is common in dry pastures in many parts of England. Ray has described it

it under the name of *Fungus esculentus pileo & lamellis albis*, but they are not properly white; he only seems to have meant to distinguish it from the common redgilled kind.

2. *Lepiota simplex laevis pediculo crasso bulboso.*
The smooth *Lepiota* with a thick, bulbous pedicle.

This is a large and beautiful Fungus. It grows to about four inches in height, and its head is more than half an inch in diameter. The bottom of the pedicle is a bulb of an irregularly roundish shape, and of the bigness of a large walnut; from this the pedicle continues of the thickness of a man's finger, and the head is obtusely conic. The pedicle is whitish; the outside of the head of a pale brown, and glossy, and the lamellæ white; the head is thick and fleshy, but of an ill smell. The flowers in this species stand single, and the seeds also are disposed singly on the lamellæ. There is no annular membrane on the stalk. It is common on many of our heaths, among the fern and furz-bushes; Putney heath produces a great quantity of it. C. Bauhine and Ray describe it under the name of *Fungus pediculo in bulbi formam excrefcente*.

3. *Lepiota annulata simplex squammata.*
The scaly, annulated, simple *Lepiota*.

This is also a large Fungus. It grows to four or five inches in height, and its head is three or four inches in diameter. Its pedicle is somewhat thick at the base, and from thence rises of the thickness of a man's finger. It is not smooth, but squammated as it were with the remains of external membranes decayed; near the top it has a beautiful annular membrane, of a tough texture, and usually somewhat erect, sometimes horizontal, sometimes dependent. The head is broad and almost flat, rather rounder in its manner of rising than conic. Its edges turn in, and its external surface is cracked and squammated, as the pedicle, with the remains of some other membranes. The whole plant is of a somewhat deep, but not unpleasant, brown colour, except the lamellæ, which are sometimes whitish, sometimes of a pale red.

It is frequent with us in woods and on heaths. Hampstead heath and Cane wood abound with it. Fabius Columna calls it, *Fungus diplocoides quercinus*; and C. Bauhine, *Fungus bulbosus fuscus duplici pileolo*.

4. *Lepiota ramosa, glutinosa, flava.*
The yellow, glutinous, ramose *Lepiota*.

This is a very singular and very elegant species; it rises from a thick tuberous root, and that usually with three or four stalks. Each of these is soon after divided into two or three more, and these sometimes send out lateral ramifications, so that it is not uncommon to see ten or twelve branches from one root. Each of these has its head of a circular figure very little elevated at the summit, and often hollowed. The stalks are about a third of an inch in diameter, and the heads an inch and half broad. The stalks are of a pale whitish colour, the heads of a deep yellow, and covered with a glossy, glutinous matter; the lamellæ are white. The whole plant has a strong and disagreeable smell. The anthers in this species stand four on each stamen, and the seeds are accordingly arranged in little clusters, four together. It is common at the stumps of old trees in autumn: there is also a simple Fungus of this genus which resembles it in colour, which grows in the same places, and, till taken up, is easily mistaken for it. This is found very plentifully in Hornsey wood, and about Highgate and Hampstead.

These four species may serve to give a general idea of the different appearances of the *Lepiota*. The other species are extremely numerous; the principal of them will, however, be easily understood by their names. They are, 1. The common esculent *Lepiota*. 2. The great, green, rough *Lepiota*. 3. The flat-headed, yellow *Lepiota*. 4. The pale, yellow, contorted, esculent *Lepiota*, called the chanterella. 5. The funnel-headed, great *Lepiota*. 6. The great, red *Lepiota*. 7. The round purple-headed *Lepiota*. 8. The long-stalked, annulated *Lepiota*. 9. The great flat-headed *Lepiota*, with a bulbous, violet-coloured pedicle. 10. The broad, white-

white-headed *Lepiota*, with an acrid, milky juice. 11. The broad, white-headed, milky, but mild *Lepiota*. 12. The great, red-headed, short-stalked *Lepiota*. 13. The great long-stalked *Lepiota*, with turning up edges and white lamellæ. 14. The deep, yellow, conic-headed *Lepiota*. 15. The mouse-coloured *Lepiota*, with white lamellæ. 16. The oval-headed *Lepiota*. 17. The great white varying tree *Lepiota*. 18. The purple-rimmed, livid *Lepiota*. 19. The white, dusty-headed *Lepiota*. 20. The mucous, greenish-headed *Lepiota*. 21. The white, viscid *Lepiota*. 22. The little purple, hæmorrhoidal *Lepiota*. 23. The little flat *Lepiota*. 24. The hollow and striated-stalked *Lepiota*. 25. The thin-stalked *Lepiota*, with few lamellæ. 26. The purple-stalked, yellow-headed *Lepiota*. 27. The long-stalked, milky and acrid *Lepiota*. 28. The bulbous, brown, acrid, lactescent *Lepiota*. 29. The yellowish, acrid, and lactescent *Lepiota*. 30. The tough, purplish, acrid, lactescent *Lepiota*. 31. The blackish dung *Lepiota*, with the head striated externally. 32. The little purple dung *Lepiota*, with the head striated on the upper part. 33. The branched silvery *Lepiota*. 34. The great perennial-rooted *Lepiota*. Beside these, there are a multitude of other species of all the principal kinds, differing in colour and other circumstances. I have figured and described in MS. of these and the other genera of Fungi more than eight hundred, but to give them here would make this volume, not a history of plants, but a history of mushrooms.

F U N G I.

Class the Second. Genus the Second.

SOLENIA.

SOLENIA is a genus of Fungus's, consisting of a pedicle and a head. The head consists of two parts; the upper one of a fungous texture, the under one tubular. The under part is easily separable from the upper, and is composed of a great number of short and slender tubes, joined side by side to one another. These tubes are of a cylindric figure, and open at the mouth or under extremity.

The *Solenia* produce male and female fructifications in separate parts of the same tubes. The male flowers have neither calyx nor corolla, they consist only of stamina and antheræ: the stamina are very short, the antheræ oblong and large; they grow to the verge of the tubules, four, six, or more in number to each tubule. The female flowers we see nothing of, except the seeds; these are very small and roundish, and are disposed in series along the inside of the tubes.

The heads of the *Solenia* are in general less elevated than those of the former genus. They rather resemble segments of spheres than cones.

1. *Solenia pediculo bulboso.*

The bulbous-stalked Solenia.

This is a very singular Fungus; it grows to four or five inches high, and its pedicle is more than three inches in diameter. It is of a dusky yellow on the upper part of the head, and of a clearer but somewhat greenish yellow underneath: the stalk is of the same colour with the external surface of the head. It is bulbous, and as big as a large walnut at the bottom; from this it rises of the thickness of a man's finger to the head: the head is thick and fleshy, and of a good smell and taste. Its under part is composed of extremely narrow tubules, so that its surface appears pierced with innumerable small holes. When it has just arrived at its full size, the male flowers may be seen at the extremities of these holes; and, so far as I am able to determine from two or three examinations, six of them seem to adhere to every tubule: the seeds are extremely minute, and difficultly discernible. This species grows with us in woods pretty frequently. Ray describes it under the name of Fungus porosus crassus. He says, it is abundantly distinguished from all the other Fungus's by its head being porous, not lamellated underneath. It is probable that Mr. Ray, at the time when

he

he wrote this, did not know any other species of the porous kind; but it is somewhat odd, that Dillenius, who adds many other species of them in the third edition of the Synopsis, should let such a remark stand.]

2. *Solenia pediculo crasso, punctato, brevi.*

The Solenia, with a short, thick, punctated stalk.

This species does not grow to more than three inches in height, and it's head is fully as much in diameter. The stalk is as thick as a man's thumb, and about as long. The general colour of it is a brownish yellow, but it is elegantly spotted with small dots of purple; it is fleshy, succulent, and of a good smell. The head is nearly flat, semicircular, and undulated at the edges; it is of an orange colour on the upper side, and of a pale yellow underneath, where it is perforated with very large holes, at the extremities of each of which stand four antheræ. Within the tubes the seeds are easily distinguishable; being considerably large for those of a Fungus, and of a globular figure. The plant grows with us in woods, but it is not common. I have met with it once or twice in Cane wood by Hampstead. Dillenius calls it, *Boletus luteus*. Micheli, *Suillus esculentus magnus, crassus, pileolo fopine fulvo*, prone *lateo pediculo crassiore concolore punctis et lituris rubris notato*. This author calls all the *Solenia* *Suilli*, because of the hogs being fond of eating them.

3. *Solenia pediculo ventricoso.*

The hollow and protuberant-stalked Solenia.

This is a very singular Fungus. It grows to five inches in height, and it's head is of about two inches in diameter. It's stalk, which is the singular thing belonging to it, is at the surface about a sixth of an inch in diameter, and hollow. From this part it goes downward two inches or more into the earth, tapering all the way till it terminate in a point; and, as it rises upwards, it swells, till at about the middle of it's height it forms a hollow part of an inch in diameter, and of an inch and half in length; this is of the greatest thickness in the middle, and from it's upper end continues of the size of one's little finger to the head. The head itself is more elevated than in many other species of this genus, but it does not run up into a cone, but rather forms a segment of a circle. It is of a dusky orange colour on the upper part, and of a brighter yellow underneath. The tubes it is there formed of are moderately large, and at their openings there stand six antheræ to each. The seeds are large for those of a Fungus: a very moderate magnifier will shew them in the tubes. The stalk is of a brownish yellow, and is all the way hollow. This species is frequent in Charlton forest in Suffex. Micheli calls it, *Suillus perniciosus, superne obscurus, inferne ochroleucus pediculo ventricoso, superne pileoli parti concolori radice in mucronem longum producta*.

The other known species of *Solenia* are but eight, and will easily be distinguished by their names. They are, 1. The thick, whitish *Solenia*. 2. The smaller, red and yellow *Solenia*. 3. The brown-headed *Solenia*, with the under part white. 4. The purple-headed *Solenia*, with a cream-coloured under side. 5. The hairy, yellowish *Solenia*. 6. The great viscid, yellowish *Solenia*. 7. The long-stalked *Solenia*, with a yellowish, red head, white underneath; and 8. The short and slender-stalked *Solenia*, with a broad reddish head.

F U N G I.

Class the Second. Genus the Third.

P O R I U M.

PORIUM is a genus of Fungi consisting of a pedicle and a head; the head of which has it's proper substance, in the under part, pierced with a great number of holes of various shapes and dimensions in the several species, and producing distinct male and female flowers. The male flowers have neither calyx nor corolla, but consist only of anthers, affixed to very short stamina, and placed round the edges of the holes. The female flowers are placed within the holes: we see nothing of them but the seeds, which are round, very minute, and placed singly on the inner surface of the cavities.

The *Poria* and *solenize* both exhibit the same appearance of perforations on the under part of the head, but, in the *solenize*, what we see, as perforations, are the mouths of a multitude of tubes, which conjunctly form a body, easily separable from the substance of the head; whereas, in the *Poria*, they are mere holes made in the substance of the head itself, and, therefore, are inseparable from the rest of it. The holes in the others are generally much deeper than in these.

1. *Porium poris minoribus capitulo plano.*The flat-headed *Porium* with small pores.

This is a Fungus of no great beauty, but singular enough in it's manner of growth. It's pedicle is not more than an inch and an half in length, it's head near three inches over. The pedicle is smallest at bottom, and gradually grows larger upwards. It is of a soft, spongy structure, and yellowish-brown colour. The head is flat, and undulated at the edges, irregularly protuberant on the surface, and rather depressed than elevated, where the pedicle is inserted. It is of a yellowish-brown colour on the upper part, and of a greenish-yellow on the under, where it is pierced very thick with small and shallow holes. The whole Fungus is fleshy and succulent, but of an ill smell. It's flowers stand four at the mouth of every hole; it's seeds are moderately large for those of a plant of this kind, and very numerous, covering the whole inner surface and base of the holes, and giving the whole a granulated appearance. It is common in some parts of England. It grows usually to the stumps of trees in damp places. C. Bauhine has described it under the name of *Fungus angulosus pediculo exiguo*; and Sterbeck, under that of *Auricula flammea malchi*.

2. *Porium pilosum cavitatibus maximis.*The hairy *Porium* with very large cavities.

This is an extremely singular and beautiful species. It seldom grows to more than an inch and an half in height, and it's head is about half an inch in diameter. It's pedicle is about an eighth of an inch in diameter, a little larger at the base than any-where else, and of a brownish colour. The head is pretty much elevated, but rather semicircular than conic in it's figure. It is moderately fleshy; in colour, of a ferrugineous brown, and hairy at the edges. It's under part is formed into very large, shallow cavities, of an angular form, and has something of the resemblance of a boney-comb in miniature, and is of a white colour. The whole plant has a strong and disagreeable smell. It is frequent, in the forest of Dean in Gloucestershire, on the branches of old elms and other trees. Micheli has distinguished it by the name of *Polyporus exiguus, subtus rhomboides foraminibus fenestratus*.

3. *Porium radice ingenti perenni.*The great perennial-rooted *Porium*.

This is, perhaps, the most singular of all the Fungus class, and has led as many people into errors as any thing of the vegetable kind.

It's

It's root is of a spongy, fungous texture, and increases in an inconceivable manner in a very little time, and, as it grows in size, it surrounds and incorporates into it's body stones, sticks, or any other substances which happen to be in the way. It is not uncommon to see a root of it, of this implicated kind, of two or three feet in diameter, and, with the stones it contains, or, at least, connects together, weighing a hundred pounds, or more: it's own matter, however, makes but a small part of this bulk or weight; the smaller stones, indeed, it surrounds sometimes, and buries in it's substance; but the larger are seldom covered intirely with it, usually only connected one to another by it. From the various parts of this root, that is, from the surfaces of these stones, where covered with it, and from the crevices between the several stones, filled up with it, grows the Fungus itself: this first appears in form of an oblong conic body, two or three inches in length, and of about a third of an inch, or more, in diameter at the base. It continues in this state some time, when it begins, by degrees, to grow tumid at the summit, and, by degrees, expands into a complete and perfect head, like that of the first described Porium. The pedicle, upon the whole, is about three inches long, and, by that time the head is fully grown, is larger at the top than at the base, contrary to what it originally was: It is succulent and white. The head itself is about an inch and half in diameter, not elevated, but flat, or somewhat depressed at the insertion of the pedicle. It is tolerably thick, and of a ferrugineous colour at the top, and white, and full of small pores, underneath. The whole plant is of a good smell, and may be eaten with safety.

It is frequent in Spain, Italy, and Sicily, but we have it not in England. C. Bauhine calls it Fungus in faxis proveniens; J. Bauhine, Fungus supra lapides; and Cæsalpinus, Fungus in lapide fungoso. The Italians call it Fungo della pietra fungaja. Not only the botanists, but the fossilists, in general have claimed it's root to their share; they have taken it to be a very stone, and there is scarce a book on that subject, except our own, in which it is not described as a mineral, under the name of Lapis fungifer. They have supposed the whole congeries about the root of this plant a mass of natural stone, and have celebrated it as a peculiar species of fossil, which had the singular property of producing mushrooms, which they assure us it will at any time do on being watered, or laid in a damp place.

The other species of Porium will easily be distinguished by their names: they are, 1. The small, white, coriaceous Porium. 2. The grey, lacerated-headed Porium. 3. The small Porium, with an inverted head in form of a cup. 4. The yellowish, funnel-shaped Porium. 5. The little, short-stalked Porium, with yellowish, calyculated heads. 6. The small-headed Porium, with extremely minute pores. 7. The small, blackish Porium, with very small pores. 8. The branched, pale-yellow Porium.

F U N G I.

Class the Second. Genus the Fourth.

ACONTIA.

ACONTIA is a genus of Fungus's, consisting of a pedicle, supporting a head, the under part of which is formed into a multitude of little spiculae, or short, conic, pointed bodies, like teeth; and producing male and female flowers distinct. The male flowers have neither calyx nor corolla, but consist of a single anthera, of an oblong figure, affixed to a very short stamen. The female flowers we see no part of, except the seeds; these are single and roundish, and both these, and the anthera, adhere to the surfaces of the spiculae, at the bottom of the head, but they adhere to different parts of them. The generical name is formed of the Greek *ακοντιον*, spicula.

1. *Acontia album crassum.* *The white, thick Acontia.*

This is a very delicate-tasted Fungus. It grows to the height of about four inches. It's pedicle is very thick throughout, but more so near the bottom than elsewhere. It

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has

has a kind of bulb near that part, of the bigness of a walnut, from which it terminates downward in a sort of blunt cone, and goes up, of the thickoess of a man's thumb, till near the head, where it swells out again. It is of a whitish colour, succulent and tender. The head is about two inches and a half in diameter; it is thick, fleshy, and undulated at the edges. It is not at all elevated in the center, but often rather depressed. It is thinnest at the edges, and is, throughout, smooth on it's upper surface. On the under part it is formed into a multitude of little spiculae, of a conic figure, and of about a sixth of an inch in length. The whole plant is of a whitish colour, and of a good smell. The flowers stand singly on the upper parts of the spiculae, and the seeds afterwards appear on the lower.

This species is a native here, but it is not common. I have met with it in Charlton-Forest in Suffex in October. We do not eat it, but in Italy, where it is more common, it is brought to market for that purpose. J. Bauhine calls it *Fungus pæne candidus, prona parte erinaceus*.

2. *Acontia cyathiformis coriacea.*

The tough, hollow Acontia.

This is a very singular species. It rises from the earth with a pedicle of an inch, or somewhat more, in length, and about a fifth of an inch in thickness, tolerably tough, and of a yellowish-brown colour. On the top of this stands a head, of the shape of a hollow, inverted cone, or of a common drinking-glass. It is near an inch and half in height, and as much in diameter at the top, from whence it descends gradually smaller to the base, where it ends of the thickness of the pedicle. This head is throughout of a dusky, ferruginous yellowish colour. It's plain side is marked with a number of parallel circles, and covered with a fine soft down; it's other side, which, in the condition it is in, in this hollow state, is it's outer one, is covered with short spiculae, or points; they are broadest at the base, and small at the extremity, and are not more than the tenth of an inch in length. About these hang the antheræ and the seeds of the plant: the former are oblong, the latter round, and extremely minute. The whole plant is tough, and of a very bad smell. It is found in our woods, but not very common. I have met with it in Leicestershire, and have received specimens of it from Yorkshire; elsewhere I have not heard of it. Sterbeck describes it under the name of *Fungus campanulatus lignosus*.

3. *Acontia pediculo teneriore.*

The thin, tender-stalked Acontia.

This is extremely different in it's general form from all the other species of this genus, rises from the ground with a small, fine, and tender pedicle, two inches high, as thin as a small packthread, and of a pale brownish-yellow colour. On the summit of this stands a head of about half an inch in diameter, and of a semiorbicular figure. It is soft and hairy, of a pale yellowish-brown colour, and of an uneven surface. The hollow, or under part, is thick set with oblong, conic spiculae, on which stand the antheræ and the seeds. It is a very elegant little plant, but of an ill smell. It is not a native of England, but in the woods in the East Indies it is common. Breynius calls it *Fungus, non vesicus echinatus, minor, hirsutus, pilcolo semiorbiculari fusco*.

The other species of this genus are not numerous, and they will easily be distinguished by their names: they are, 1. The pale-yellow, esculent *Acontia*. 2. The brownish-yellow, large, discoid *Acontia*. 3. The coriaceous, ferruginous, small *Acontia*, growing in clusters. 4. The black, ramose *Acontia*. 5. The yellowish *Acontia*, with grey, oblong teeth. 6. The squammose, black-headed *Acontia*. 7. The black, funnel-fashioned, tough *Acontia*.

F U N G I.

Class the Second. Genus the Fifth.

L E O T I A.

L E O T I A is a genus of Fuogi, consisting of a pedicle and a head: the head is plain on it's upper surface, and neither porous, lamellated, nor echinated in it's under one, but perfectly smooth, and produces separate male and female flowers; the male flowers consisting only of single antheræ, affixed to every short filament, and the female flowers having no part visible, except the seeds, which are small and round. These male and female flowers are placed on the different parts of the same surface of the head, sometimes on the upper surface, and sometimes on the under.

1. *Leotia tenerior elatior capitulo cavo.**The tender, taller Leotia, with a hollow head.*

This is a very delicate and beautiful species; it grows to two inches, or more, in height, and it's head is not more than a quarter of an inch in diameter. The pedicle is as fine as a hair, white and pellucid. The head is of an obtusely conic form, and has no pores or lamellæ, but is perfectly smooth in it's under surface. The pedicles are scarce able to support the weight of these little heads, but bend and totter under them on the least motion. The whole plant is of a snow-white colour, and extremely tender. It is a very difficult object to manage for the microscope, but, if properly examined, a dusty matter will be found on the under side of the head, composed of globules of two kinds, oblong and round, which are evidently the antheræ and the seeds.

This species is common with us in the hollows of rotten trees, and on decayed leaves. I have often met with it on old ash-leaves on Primrose-hill near Hampstead. Ray calls it *Fungus minimus candidus absque lamellis*.

2. *Leotia parvula capitulo plano.**The little Leotia, with a flat head.*

This is a very minute Fuogus; it does not grow to more than a third of an inch in height, and it's head is somewhat less than that in diameter: it is, however, very distinct in all it's parts, and a very beautiful species. It's pedicle is thin, and of a whitish colour, and is all the way up of the same bigness: the head is perfectly flat, and is as smooth on one side as on the other; the edges of it sometimes turn up a little. The whole plant is white, and has a disagreeable fungous smell. The lower surface of the head, examined with a good microscope, shews a number of minute bodies scattered over it, part of which are oblong, part roundish; the former are evidently the antheræ, the latter the seeds. This little Fungus is common on rotten wood in Charlton-forest, and in many other places. Micheli calls it *Fungoidaster minimus discoides albus*.

3. *Leotia gelatinosa capitulo subviridi.**The gelatinous Leotia, with a greenish head.*

This is a very singular and beautiful Fungus: it grows to about an inch and half in height, and it's head is about an inch in diameter. It's pedicle is of the thickness of a sixth of an inch, hollow ridged on the surface, and of a fine gold-yellow. It is smallest at the bottom, and grows larger towards the top, where it expands into a kind of head, depressed at the center, and round at the edge; the rims turning in: this head is of a greenish colour, and covered with a gelatinous humour on the surface. It's under part is perfectly plain and smooth, and the antheræ and seeds are found scattered over it in form of a fine dust. We do not meet with this in England, but it is very common in France and Italy. Vaillat calls it *Fungus gelatinosus flavus*. It is of a tender and succulent structure, and of a disagreeable smell.

The

The other species of *Leotia* are, in general, very small; they will easily be distinguished by their names. They are, 1. The scarlet little *Leotia*, with semiorbicular heads. 2. The brownish *Leotia*, with roundish heads, and seeds on the outside. 3. The little, round-headed *Leotia*, found on decayed horses' hoofs. 4. The capillaceous, brown, dwarf *Leotia*, with half-round heads. 5. The horse-dung *Leotia*, with round heads, marked with black spots. 6. The dusky, cat's-dung *Leotia*. 7. The ramose, whitish, cat's-dung *Leotia*. 8. The black, pin-headed *Leotia*; and 9. The beautiful purple *Leotia*, with round heads.

F U N G I.

Class the Second. Genus the Sixth.

DICTYARIA.

DICTYARIA is a genus of Fungi, consisting of a pedicle and a head, the head of which is reticulated on the outer surface, and smooth on the inner, producing male and female flowers separate, both on the external surface of the head. The male flowers are single anthers, affixed by short stamina to the ridges which make the reticulation of the head; and the female flowers shew no part of themselves, except the seeds, which are scattered singly on the surface of the hollows between the reticulations. The heads in this genus never stand out far from the stalks; and in some of the species they are fastened to them at the bottom, and do not shew any cavity underneath, till cut open. Micheli makes three genera out of this one, by using, as generical distinctions, such as are only specific ones: Linnæus comprehends all the species, as we do, under one genus; but he calls this genus *Phallus*, a name very well adapted to two or three of the species, but not at all to any of the others. Tournefort also calls them all *Boleti*; but, as *Phallus* is not general enough, and *Boletus* has been used by other writers in other senses, we have given the genus the name *Dictyaria*, from the Greek *dictyon*, rete, a net.

1. *Dictyaria capitulo clauso ovato.*

The Dictyaria, with an oval head fastened to the stalk at the bottom. **The**

This is a very well known and very much esteemed Fungus. It grows to three or four inches high, and its head, which frequently takes up more than half its height, is an inch and half in diameter; its pedicle is irregularly shaped, usually somewhat larger at the bottom than in any other part, and often somewhat protuberant in the middle. It is of a pale brownish colour, and sufficiently robust and strong. The head appears to be a solid oval body, of a reticulated surface, affixed to the top of this pedicle; but, on opening it, the pedicle is found to go up to the summit, and the head to be there fixed to it, and hollow and loose from it all the way down to near its base, where it is again connected with it all round. The inner surface is tolerably smooth, but the external one is reticulated in a beautiful manner by very prominent ridges, which, uniting and separating again at small distances, form a kind of irregular cells, of various figures and diameters. The ridges of the head are of a dusky deep brown, the intermediate spaces of a pale brown, like the stalk. The ridges, carefully examined, will be found, when the Fungus is just ripe, to be covered, as it were, with anthers; they are extremely minute, and of an oblong figure, and stand single. The seeds are also very minute and round, and are scattered singly over the surface of the hollows between the ridges. The whole Fungus is of a strong but agreeable smell. It grows under hedges, and in the bottoms of dry ditches, in spring, and, in some parts of England, is very common. The botanical writers have all described it: J. Bauhine calls it *Fungus rugosus vel cavernosus*; and C. Bauhine, *Fungus porosus efulentus*. Tournefort, *Boletus efulentus rugosus amplior et orbicularis*.

2. *Dictyaria*

2. *Dictyaria capitulo conico aperto, pediculo bulboso.*
The bulbous Dictyaria, with a conic, open head.

This is a very singular Fungus, and not less valuable at table than the morel, of which it has the flavour, and all the other qualities. It grows to four or five inches high, and its head is, at the base, not less than two inches in diameter. Its pedicle is bulbous at the bottom, and from thence runs up to the head, of the thickness of a man's finger. It is succulent and hollow, and usually is somewhat scabrous on the surface; its colour is a dusky brown. The head is of a conic form, terminating at top in a tolerably sharp point; its surface is reticulated, like that of the former, but the ridges are thicker and more prominent, and the cavities between them deeper and larger. The colour of the head is a dusky brown; the ridges are deeper coloured than the intermediate spaces, and the inner surface deeper coloured than either. The surface of the reticulations is dusty, as the Fungus grows toward ripening, and the microscope shews this dust to be antheræ of an oblong form, with scarce any visible pedicles. The seeds are oval and larger than in the former; they lie in the cavities between the ridges. We have not this species in England, but it is common in Germany, and is sometimes brought to market in Italy. Micheli describes it under the name of *Phalloboletus esculentus pileolo conico, pediculo cavo, leucophæro*.

3. *Dictyaria capitulo minore umbilicato perforato.* **Phallus.**
The Dictyaria, with a small umbilicated, perforated head.

This is one of the most singular plants of the Fungus kind. Its first appearance is in form a rudely globular body, of a white colour, with an oblong, crooked, single root, which penetrates into the earth, and fastens it to it. After a little time this globular body expands into five or six lacinated segments, which are thick and fungous, and, when cut, are found to consist of two pretty thick membranes, with a glutinous stinking matter between them. In the center of these segments there stands a kind of cup of a tough fungous matter, half an inch high, nearly as much in diameter, and irregularly dentated about the edges. From this cup there rises a thick stalk, smallest at the base, where it is inserted into the cup, but larger a little higher up; it rises to four or five inches in height, and is about three quarters of an inch in diameter, and somewhat rough on the surface. On the top of this pedicle stands a small head, a little more than an inch long, and about an inch in diameter. It is of a conic form, reticulated and callous on the surface, and has an umbilicus or hollow membrane at the top, in the center of which there is a perforation which goes down into the hollow of the stalk. The stalk, when cut, is found to be only a thick membrane, surrounding a vast hollow, capable of admitting a man's finger, and reaching down to the very base, where it is close. The stalk grows taper, where it is covered by the head, as well as where it is inserted into the cup at the base, but the rim of the head scarce stands out at all from it. The ridges of the head are covered with a dusty matter, which is composed of the antheræ; the seeds lie in the cavities between, but they are very small and difficult to be seen; in time the callous matter of the head melts into an extremely fetid, glutinous liquor, which, dropped into water, blends with it, and lets fall to the bottom a quantity of round seeds, which it was carrying to the earth. The whole plant is white, and of a most extremely fetid smell.

It is found in many parts of England in great abundance. I have met with it on the sides of Mendip hills in great plenty, and about Catthorpe in Leicestershire. Most of the botanical writers have described it. J. Bauhine calls it, *Fungus phalloides*; and C. Bauhine, *Fungus foetidus penis imaginem referens*. Tournefort calls it, *Boletus phalloides*. It is found in August, September, and October, rarely later.

It has a multitude of creeping filaments, which run various ways under the ground, and from which the single oblong roots, which grow to the globular bodies, which are the first appearance of this Fungus, arise.

The other species of the *Dictyaria* will be easily distinguished by their names. Those of the morel kind, with the heads closed at bottom, are, 1. The whitish, esculent, rough-stalked *Dictyaria*. 2. The yellowish, small-headed *Dictyaria*. 3. The conic-headed, dark, purplish *Dictyaria*. 4. The greyish, green *Dictyaria*, with a very thick pedicle.

Of the open-headed kind are, 1. The great curled-headed *Dictyaria*, with a grey
 N pedicle.

pedicle. 2. The little conic-headed Dictyaria, with a grey stalk. Of the phallus kind, or those with volva at the base of the pedicle, are, 1. The smaller Dictyaria, with a purple volva. 2. The little-headed Dictyaria, with a great umbilicus. 3. The pale, yellow Dictyaria, with a head supposed to be without a perforation in the center. 4. The small, oblong Dictyaria of Virginia. 5. The rough-headed, not umbilicated Dictyaria. These three last are indeed all said not to be perforated at the top, but the descriptions of them are in other respects so imperfect, that we are not to pay too much credit to this particular.

F U N G I.

Class the Third.

Such as grow erect, and have no beads.

Genus the First.

CLETHRIA.

CLETHRIA is a genus of Fungus's, consisting of a reticulated substance, or of ramifications frequently uniting one with another, formed into a roundish or oval body, and in some measure resembling the head of a morel, with the inner substance cut out, and only the ridges which form the reticulation left: it is produced from a volva in the manner of the phallus, and some other of the Dictyaria, and produces distinct and separate male and female flowers.

The male flowers are single Antheræ without any filaments, very small, but of an oblong figure, and adhere to the sides of the reticulations.

Of the female flowers we can distinguish nothing, except the seeds, which are very small and round, and are contained in a mass of a soft matter, glutinous, and of a grey colour, a vast lump of which is contained within the hollow of the plant, while in the volva, which, as it grows up, resolves into a thick foetid liquor, and carries away the seeds with it.

There is so great an analogy between the Clethriae and the Dictyariae, that the having and not having a head seems the great difference. Micheli calls this genus Clathrus; we, from the same Greek, *κλεθρία*, a lattice, Clethria.

1. *Clethria ovata reticulationibus crassiss.*

The oval Clethria, with thick reticulations.

This is one of the greatest beauties of the Fungus class. Its root is oblong and slender, divided into several ramifications, and penetrating five or six inches deep into the earth; from this there arises a little tuberosous body of a dusky purplish colour, and of a rough surface; this enlarges by degrees, till it become of the bigness of a walnut, and of a roundish figure. Soon after this, its outer membrane divides irregularly into four or five broad segments, and within these stands a globular body hollow, and consisting of ramifications variously disposed, and joining one with another, so as to form a kind of lattice-work. The cavity of this body is at this time filled with a substance of a gelatinous nature, but with a mixture of a dusty matter in it. The outer membrane remains in its segments, and forms a kind of cup; and the globular latticed body extends by degrees, carrying up a part of the mass, which before filled it, on the inner part of its ramifications, the rest remaining at the base. The body of the Fungus is now no longer filled with any thing, but is hollow, empty, and composed only of this shell of lattice-work; in this state it acquires an oval figure instead of its round one, being smallest at the base, and growing gradually larger to the top; in this state it makes a most beautiful appearance, the ramifications of which it is composed are of about a third of an inch in diameter, and they form irregular holes between them, oblong, angular, often rhomboidal, and capable of admitting a man's finger. The calyx or volva at the base is of a dusky purple colour; all the rest of the plant of a fine red, spotted within with purple; as the plant rises in height, the ramifications are to be examined to find the antheræ, which then adhere to them in form of a fine powder. The glutinous matter which once filled the hollow of the plant, and which contains the seeds at this time also, melts into a thick, viscid, and very stinking liquor, and this runs out at the cavities between the ramifications, in form of large drops. The best method

thod of finding the seeds is to drop this into water, on which the liquor blending with the water, the seeds fall to the bottom; they are very small and round. The whole plant, though of so beautiful a colour, is of a very foetid smell. Most of the botanical writers have described this species. Tournefort calls it, *Boletus cancellatus purpureus*. C. Bauhine, *Fungus ruber cancellatus*. Cæsalpinus, *Fungus quem ignem sylvestrem vocant*; and Clusius, *Fungus coralloides cancellatus*. It is frequent in Italy, but is not found with us.

2. *Clethria rotundior ramificationibus tenuioribus.*
The rounder *Clethria*, with smaller reticulations.

This is a very beautiful species, tho' less so than the former. It rises from a thin and membranous volva, and consists of ramifications of not more than a fifth of an inch in thickness, flatted and joining so frequently, as to make very small reticulations. The whole plant is white, but spotted on the outside with red, and is round in figure: the cavity of it, while young, is filled with a white, spongy, glutinous matter, which afterwards runs off in a foetid liquor as in the former species, and the sides of the ramifications are in the same manner furnished with antheræ. Micheli calls this, *Clethræ olivaria*. Ray, *Fungus pro capitulo laminam longam, latam, multipliciter laciniatam, et convolutam habens, albam, intus punctis rubris creberrimis pictam, calycisquammoso exceptam*. Names of this length we hope will reconcile the reader to our new generical terms, since there is no other means of shortening them. This species is common in Germany. It is produced also in Italy but rarely. We have it not at all in England.

3. *Clethria flovescens ramificationibus compressis.*
The yellow *Clethria*, with flatted ramifications.

This is another very beautiful species. It rises like the others from a membranous volva or case, and grows to the size of a large pear, and much resembles that fruit in shape. It is composed of flat ramifications, of the breadth of a quarter of an inch, and of about half that measure in thickness. These join frequently so as to give the whole a reticulated form, and compose a sort of open case. The whole plant is of a fine bright yellow colour, and has antheræ on the edges of its ramifications, and a glutinous matter surrounding the seeds in its cavity, while young, which as it grows up melts into a foetid water, containing the seeds in it.

It is a native of Germany, France and Italy, but not of England. Tournefort calls it, *Boletus cancellatus*; and Barrelier, *Fungus coralloides cancellatus flovescens*. These are all the known species of this singular genus.

F U N G I.

Class the Third. Genus the Second.

A R C Y R I A.

AR C Y R I A is a genus of fungus's, consisting of a head of a reticulated structure, not hollow, arising from a case or volva, and containing distinct male and female flowers: The male flowers consist only of oblong antheræ, arranged by fours together, on the summit of the same filament, which adheres to the ridges of the reticulation: The female flowers we see no part of, except the seeds which are small, of an oval figure, and lie in the cavities of the reticulations. The species of *Arcyria* hitherto discovered are all small ones, and they require the assistance of a good microscope to distinguish their fructifications with accuracy. Micheli has divided the genus into two, by using specific distinctions in the place of generical ones. He calls them *Clathroides* and *Clathrodistrum*, from their more or less resemblance to the *Clethria*, or *Clathrus* before described. We call them *Arcyria*, from the Greek, *αρκυσ*, a net.

1. *Arcyria pediculo in volvam expanso.*
The *Arcyria*, with its pedicle expanded into a cup.

This is a very elegant little plant. Its first appearance is in form of a little round-headed Fungus, with a slender pedicle, in which state it has been described
by

by more than one author, under the name of a *Fungus non lamellatus*. Micheli was the first who gave an account of it in its more perfect and mature state.

It rises first from the substance it grows on with a pedicle, as fine as a hair, of about a sixth of an inch in height, and terminated at its top by a round globule; in this state I have known it continue two months, so that they are somewhat excusable who took this for its ultimate one. After it has continued its due period in this form, the globule opens gradually at the head, and forms a volva or case like the cup of an acorn, in miniature, but of a somewhat more conic form. In the bottom of this is seen a granule of a rough surface; this by degrees expands and fills the cup, and in a little time after stands as much above its surface, as is the whole length of the plant beside. This head, when full grown, is of an elliptic form, thicker than the cup it proceeds from in its middle part, and growing somewhat smaller toward the summit, as well as toward the base. It is not hollow, but is throughout of a reticulated texture. The ramifications, which form the reticulation, are very small, and variously interwoven; on these stand the anthers, four on each common filament, and within the cells are the seeds.

The whole plant, in its utmost growth, does not exceed half an inch in height, and its head, in the thickest part, is not more than a fifth of its height in diameter; the head is of a dusky purple colour, the pedicle brownish. It is frequent in Charlton forest in Suffex, growing to the surface of rotten sticks that lie on the ground. I have not met with it elsewhere, but doubt not but it is frequent enough, only overlooked from its smallness. Micheli, who first discovered it, calls it *Clathroides purpureum pediculo donatum*.

2. *Arcyria fessilis volva longiore.*

The fessile Arcyria, with a longer volva.

This is a still smaller plant than the former, scarce ever exceeding a quarter of an inch in height, in its utmost perfection. Its first appearance is in form of a small, purplish tuberosity, of an oval figure, adhering by its smaller end to the substance it grows on. After it has been in this state some time, the upper part of it opens, and it by degrees expands into a cup or volva of an oblong conic figure, still adhering by its lower part, and not raised on a pedicle, as the volva of the former species. From the cavity of this volva there arises a protuberance, which in time becomes a head of an oblong elliptic figure, and of the same reticulated structure, and the same fructifications, with the former. The whole plant is of a purplish colour, with a tinge of scarlet, and makes, when closely examined, a very pretty appearance. It is common on dead sticks in Charlton forest in Suffex. I once also found a great deal of it in one of the woods in Kensington gardens. Micheli calls it, *Clathroides purpureum pediculo carens*.

3. *Arcyria pediculo ad apicem capitis producto.*

The long, pedicled Arcyria, with the stalk penetrating the head.

This is the largest known species of this genus. It grows to an inch or a little more in height, but what it has in height over the former species, it wants in colour, they being both of a beautiful purple, this of a dusky brown. It rises with a very slender pedicle naked, and of more than a third of an inch high; at the top of this stands a little globular tubercle, scarce larger than the head of a pin, which soon opens, and, as soon as it is open, falls off from the stalk, and leaves no mark of any thing having been there. In the place of this membrane there is seen a little oblong body of a granulated surface, which by degrees grows into an head of an oblong form, like those of the former, and of the same reticulated texture, but with the pedicle continued straight up all the way through the center of it to the very summit, and visible all the way in form of a slender black filament, like a horse-hair, only vastly smaller. The substance of the head is of the same reticulated matter with those of the others, and the fructifications are the same in it. The stamina arranged along the ramifications sustain each four anthers, and the interstitial cavities have the seeds arranged four by four in them. I found, last year, more than a thousand plants of this in a cluster, in a crack of an old water-pipe, near Ilington. I have also seen it in Charlton forest, and in Cane wood near Hampstead.

The other species of *Arcyria* will easily be distinguished by their names: they are, 1. The yellow *Arcyria*, without pedicles. 2. The black, very small *Arcyria*, with short pedicles. 3. The deep, brown *Arcyria*, with shorter heads. FUNG I.

FUNG I.

Class the Second. Genus the Third.

LYCOPERDON.

LYCOPERDON is a genus of Fungi, consisting of a globular or oval body, sometimes sessile, sometimes elevated on a thick pedicle, and covered with a volva in form of an external skin, which usually remains entire, till the plant is full grown; and producing separate male and female flowers, both contained in the cells of a fungous substance. The male flowers consist of oblong, anthers, very minute clusters of which are affixed to the same filament, which adheres to the sides of the cells. The female flowers are placed in the cavities of a reticulated placenta, which fills up the greater part of each cell, in the spongy matter of the plant; we can distinguish no part of them, but the seeds which are very minute and round.

There is no genus of Fungi which requires so much attention as this, in order to the discovering its fructifications; in some of the species they are so small, as scarce to be distinguishable at all; in others they are more visible; but, in the very easiest of observation, a short period only is allowed for the examination. The spongy substance, which fills the plant, remains a long time confused, and the fructifications not formed; and when they are formed, and the cells distinct, it is but a very short time before the very matter of the cells breaks to powder, and the seeds fall out of the cavities of the placenta, which themselves also soon after disunite into the fine short filaments they were composed of, and the whole matter, powder, seeds, and filaments together, are discharged in form of a fine dust, through the aperture designed for that purpose in the head of the Fungus.

The accounts we meet with of perfect Fungus's of the same kind, discovered in the particles of the powder within these Fungi, is erroneous. What these observers have taken for little fungus's, has been the placenta of the cells not yet disunited; in this case they are a kind of rough oval bodies, which may be mistaken for complete Fungi of the same kind, by people who do not know that the plant arises regularly from a roundish seed, and does not appear itself in its perfect form, till long after the first shooting of that seed.

Micheli, who has gone so far toward the discovering the fructification of this genus of plants, as to discover the placenta, which he calls glebule, with their seeds, in some of the species, divides this genus into four, according to the common error of taking specific distinctions for generical ones. He calls these by the names of Lycoperdon, Lycoperdoidea, Lycoperdastrum, and Geaster. The last of these has been received also by many others as a distinct genus, but without sufficient foundation: the radiated matter at the bottom of the body, which distinguishes this genus, as it is called, is no other than a volva thus divided; and all the Lycoperdons have volva, which in the several species approach more or less to that form, in some approaching so near it, as to dispute the title with the allowed geasters.

1. *Lycoperdon volva glabra evanida pediculo crassissimo.*

The thick-stalked Lycoperdon, with a perishing volva.

This is the species of Lycoperdon in which, more than in all others, the fructification is distinguishable. It is one of the largest of the pediculated kinds, growing to eight or ten inches high, and its pedicle an inch and half in diameter. Its root is very large, and divided into several fibres, thick, short, and pointed at the ends: from this there first arises a large, tuberous body, covered with a smooth and very thin volva, in form of an outer membrane: this bursts, as the plant shoots up, and soon disappears. The plant then rises erect, with its thick pedicle, which is spongy within, but not hollow: at the top it diffends into a head, of the bigness of a large apple, which has a perforation at the summit, thro' which the seeds, and other contents, are discharged, when ripe. This head cut open, while too young, is found to contain only a spongy matter, white, and of no regular structure; but, if carefully watched, and opened, just when the seeds

are ripening, this spongy matter is found then to have formed itself into cells of an irregularly angular form, but principally oblong; and, at the surfaces of these, may be found filaments, each sustaining eight or ten antheræ: the internal part of the cells, at this time, contains a shapeless lump, nearly filling them; after a very little time more, this shapeless matter is found to be a cellular placenta, formed of a multitude of fibres, elegantly arranged in a reticular manner, with membranes between; and, in the cells of this placenta, lie the seeds, in the same number with the antheræ, or thereabout. The membrane which covers the head is considerably thick, and is composed of two others, united so closely to each other, that they appear to make but one mass.

This species is found on some of our heaths, and sometimes in woods. On Hindhead in Suffex it grows very abundantly, and in some places about Goodwood. Micheli has described it under the name of a *Lycoperdoides*: it is in perfection in September.

2. *Lycoperdon pediculo brevi globulari volva persistente echinata.*

The short-stalked, globular Lycoperdon, with an echinated, permanent volva.

This is a very pretty species, when the volva is entire. It appears merely globular and sessile, as seen upon the ground; but, when taken up, it is found to have a short and thick pedicle. This is not more than half an inch in length, before it expands into the globular body, which is usually of the bigness of a hen's egg, sometimes considerably larger, and is formed, as the heads of all the pediculated *Lycoperdons* are, of one continued set of membranes with the pedicle. Its surface is all over covered with short conic bodies, terminating in points; these are protuberances of the membrane, which forms the volva, and this membrane itself is very thin, and connected so closely to the next under it, that it seldom separates, till the Fungus is perfectly ripe, and then falls off by piece-meal. Under this is a thicker and tougher membrane, and under that another, which immediately incloses the spongy matter in which the fructifications are lodged. The surface of the whole plant is of a pale, whitish-brown colour; the spongy substance itself is at first perfectly white, but afterwards it becomes of a greenish-yellow, and is regularly cellular, containing antheræ and seeds, lodged in their placentalæ, though very difficultly distinguishable. The pedicle is fastened to the ground by a few fibrose roots, and, at the top of the Fungus, there is an aperture, out at which the seeds, &c. are discharged. This species is very common in our dry pastures, and on heaths. J. Bauhine calls it *Fungus pulverulentus dictus crepitus lupi vulgaris*; and C. Bauhine, *Fungus orbicularis*.

3. *Lycoperdon pediculatum volva hirsuta lacera.*

The pediculated Lycoperdon, with a hairy, lacerated volva.

This grows to three inches in height, and its head, which is globular, to about an inch and quarter in diameter. It appears first on the surface of the earth in form of a roundish ball, connected to the earth by four or five short filaments: by degrees it rises to its full dimensions. Its pedicle is as thick as a man's finger, and, at the top, expands into the globular head. It arrives at this its full height, while yet covered with its volva, which is a membrane moderately thick and tough, of a dusky-brown colour, and hairy: soon after this, however, as the head begins to swell yet more, the volva, or outer membrane, bursts into three or four parts, which are divided down to the middle of the stalk, and hang from it almost to the ground, with ragged edges, and lacerated extremities. The head, and part of the pedicle, now naked, are whitish and smooth on the surface, and on the summit there appears an aperture, out at which the seeds are to be soon after discharged. The head is full of a spongy substance, which, as it ripens, is divided into cells, containing the antheræ and placentalæ, with their seeds, as in the rest. The spongy substance is white at first, but afterwards of a greenish-yellow. The plant is common in our pastures in autumn. Ray describes it under the name of *Fungus pulverulentus major pediculo longiore ventricosus*.

4. *Lycoperdon globulare volva multifida glabra.*

The globular Lycoperdon, with a multifid, smooth volva.

This species of *Lycoperdon* approaches so nearly to the stellated kind called geaster, and yet is so evidently a common *Lycoperdon*, that we are apt to believe every body will

will be convinced by it, that geaster is not a genus sufficiently distinct from Lycoperdon. It grows to the bigness of a large apple, and is of a tolerably regular, globular figure. It is fixed down to the earth by a great tuft of filaments, and from thence it at first rises in form of a little globule, of the size of a nut. It grows very quick, however, and, in two or three days, is arrived at it's full maturity. It is, at first, covered with it's volva in form of an outer membrane, and it continues to be so, till nearly of it's full bigness. When full grown, there appears in the center a kind of commissure, from which, soon after, the volva, or outer membrane, begins to crack. It then divides into six or eight regular segments, which are smooth at the edges, broad at the base, and terminate in points, and in all things resemble the geaster, or stellate Lycoperdon, except that they are not divided to the base of the plant, and, consequently, cannot lie expanded on the ground, but turn their points outwards. The top of the Fungus, uncovered, appears smooth, and of a greyish-white colour, and soon after opens at the top, and discharges the seeds. The spongy substance contained in this head is at first of a bluish colour, but it afterwards becomes white. The fructifications are the same in it as in the other species. We have this Lycoperdon with us on heaths, but not common. I have met with it in Suffex and in Derbyshire in two or three places. Micheli describes it under the name of *Lycoperdastrum rotundum majus leucopharum pulpa fordide cærulea*.

5. *Lycoperdon volva stellata radiis lanceolatis osculo fimbriato.*
The starry Lycoperdon, with lanceolated rays, and a fringed osculum.

This is one of the most singular and most elegant of the Fungus kind, and is one of those plants distinguished by authors into a peculiar genus, under the name of Geaster. When it first appears, it has the form of a small roundish body, but with five or six, or more, evident marks, in form of lines, running from the center toward the circumference; soon after, these lines open into so many cracks, and the volva, which had before entirely covered the body of the Fungus, now bursts into six or eight parts, which recede from one another, and leave the body of the Fungus bare: these divisions reach half way down the substance of the volva, and, as they stand round the body of the Fungus, much represent the volve of the former species, before it's points bend downwards; the difference between these is only, that, in that plant, the entire part of the volva remains fixed to the body of the Fungus, and the tops of the segments, therefore, unable to support themselves erect, bend downwards; whereas, in this, soon after the segments separate, the whole or entire part of the volve also becomes loose, and expands itself flat upon the ground, with the segments in form of rays, extending themselves flat also from it; the volva, thus extended on the ground, is of a whitish colour, and fungous substance, and of about two inches and a half in diameter. It is composed of two membranes, with a soft and somewhat glutinous matter between them. The body of the Fungus is roundish; it stands on an extremely short pedicle, in the center of the volva, and is of the bigness of a small walnut; it's aperture, or osculum, is in the center, and, being elegantly fimbriated, it forms a sort of corona, or summit, of an obtusely conic figure. This body consists of a single membrane, containing a spongy matter, white at first, but afterwards of a brownish-yellow, and of a regularly cellular substance, in which are contained placentule, with their seeds in them, and unquestionably flowers also, like those of the rest of the Lycoperdons; though the sole opportunity I have had of examining this species in it's mature state was at a time when they were past, and the very cellular substance containing the placentule was falling to powder. At this time the fimbria of the aperture separate, and the osculum becomes distended, so that the seeds are easily discharged. This is a native with us, but is very scarce. I found it, in a lane near Cathorp in Leicestershire, in October, where, though I watched it from the beginning, it ripened, before I was aware. I never saw it elsewhere. Micheli describes it under the name of *Geaster major umbilico fimbriato*.

6. *Lycoperdon volva stellata, radiis multifidis, osculo stellato.*
The starry Lycoperdon, with multifid rays and a stellated osculum.

This is a very singular species. It makes it's first appearance in form of a round ball, lying on the surface of the ground: in a little time there appear a number of lines on the summit of this ball, and, soon after this, the volva, which had hitherto covered it, bursts and splits

splits into six or eight segments, the divisions of which run down to the very center almost. These segments, or rays, immediately on their dividing, fall flat to the ground; they are not lanceolated and entire, as in the former species, but most of them are divided into three or four segments each, at the end. The whole volva is composed of two thin membranes, with very little matter between them: in the center stands a round body of the bigness of a small walnut, at the top of which, where the rays of the volva once united, there is a stellated opening, capable of admitting the head of a large pin. This whole body is filled with a cellular, spongy substance, containing flowers, seeds, and their placentalæ, which are all together, with the comminuted matter, of the cellular substance, thrown out, at the stellar aperture at the top. The extended volva of this species seldom measures more than an inch and half in diameter. This is also a native with us, but it is very rare: I have only once seen it in the hands of the late deservedly eminent Mr Littleton Brown, who had collected it somewhere about Cheltenham. Tournefort mentions it under the name of *Lycoperdon vesicarium stellatum*; and Micheli under that of *Gaster medius radiis plerumque multifidis umbilico seu ore stellato*.

7. *Lycoperdon volva stellata, radiis fissilibus.*
The starry Lycoperdon, with fissile rays.

This is one of the most singular of all these plants; the volva is thicker, and of a tougher substance than in any of the others, and is very evidently composed, throughout, of two firm and strong membranes, with a glutinous matter between. It is divided usually only into four rays, and these are considerably broad, and the division runs very deep; they are simple and undivided at the ends. In the center of the volva stands the body of the Fungus; it is roundish, and supported on a short pedicle, and is filled, like the rest, with a spongy matter, containing flowers and seeds, and finally letting them out in form of powder, at an aperture in its top. As this Fungus ripens, the two membranes of which the volva is composed divide all the way, except just at the tips of the segments, where they are more firmly connected together. It is not long after this division that the upper part, with the body of the Fungus, begins to elevate itself from the lower, and, by degrees, raises itself up, and forms a kind of arched tower, with the body of the Fungus at its top; the extremities of the segments of the volva also, where the two membranes remain connected, are bent up considerably, so that the whole is raised to at least as much height as the volva had before in diameter. In this state it makes a most singular and surprising figure. It is a native of England, and, so far as we at present know, peculiar to it. We owe the communication of it to the late Mr Nicholls, an apothecary in Westminster, and an excellent Latin description of it in the Philosophical Transactions, to the great ornament of that profession, Mr William Watson.

That gentleman is for separating this and the other stellate *Lycoperdons* from the others under the name of *Gaster*, as differing extremely in figure; we shall give abundant proof, in the succeeding part of this work, that we are perfectly of his opinion, that, in the plants whose fructification is less visible, we ought to take the external form into the list of generical characteristics: but the result of a very careful examination of the *Lycoperdon* family, such as it could not be worth any body's while to make who was not to write upon them, convinces us that there is no essential distinction between the *Lycoperdons* and *Gasters*.

The other species of the *Lycoperdon* kind will be distinguished by their names. The most singular of them are, 1. The common, oval *Lycoperdon*. 2. The great, round *Lycoperdon*. 3. The thick-barked, compressed *Lycoperdon*. 4. The *Lycoperdon*, with a long, scabrous pedicle. 5. The small, roundish *Lycoperdon*, with a very long scabrous pedicle. 6. The white, umbilicated *Lycoperdon*. 7. The grey, hairy *Lycoperdon*. 8. The white, woolly *Lycoperdon*. 9. The cordated, or heart-like *Lycoperdon*. 10. The white, papillary *Lycoperdon*. 11. The white *Lycoperdon*, with quadrangular spines. 12. The rigid, pricked *Lycoperdon*. 13. The black-barked *Lycoperdon*. 14. The chestnut *Lycoperdon*. 15. The smooth, yellowish, round *Lycoperdon*. 16. The ferrugineous, tuberosus *Lycoperdon*. 17. The yellow, tuberosus *Lycoperdon*. 18. The bluish, round *Lycoperdon*, with fibrous, tufted roots, and a very thick pedicle. 19. The onion *Lycoperdon*. 20. The yellow, thin-skinned *Lycoperdon*, with a purple pulp.

Of the stellate kind, or those usually called Geasters, beside the three species already described, there are, 1. The pale-red, stellate *Lycoperdon*, with a fimbriated osculum. 2. The small, rough, stellate *Lycoperdon*, with a short pedicle; and, 3. The large stellate *Lycoperdon*, with a stellated osculum.

F U N G I.

Class the Second. Genus the Fourth.

CARPOBOLUS.

CARPOBOLUS is a genus of Fungi, consisting of a hollow body, in form of a cup, surrounded by a volva of the same form; and containing in it's center a single fruit, of a round figure, to the inside of which adhere the male flowers, and in the cavity of which are lodged the female; which fruit, when mature, is discharged entire, by a violent inversion of the body of the Fungus, and afterwards bursts, and discharges it's seeds. The male flowers are single antheræ, adhering to the inner surface of the upper part of the fruit in vast numbers, each having a short filament to support it. Of the female flowers we can distinguish no part but the seeds, which are very minute, and round. Micheli, who first discovered this singular genus, very justly distinguished it from all the other genera of Fungi: Linnæus, and some others, refer this, with the geaster, to the *lycoperdons*. We agree with them in referring the geaster to that genus, because the essential characters are the same in all the species of both, and the sole difference is, in the manner of the volva separating from the plant; but, in this case, we are very sensible that every one, who has an opportunity of examining these little plants, will find them sufficiently generically different from the *lycoperdon*; they have not the same internal structure, nor the same fructification, nor, indeed, do they at all agree to the characters Linnæus himself gives of the genus; it evidently approaches more to the *Cyathia*, next to be described, than to the *Lycoperdon*, but it is, in reality, a genus quite distinct from both.

1. *Carpobolus albidus segmentis latis planis.*

The white Carpopobolus, with broad, plain segments.

This is an extremely minute plant, and, like the others of this genus, requires a very careful inspection and examination to find out it's characters. It's first appearance is in form of a little whitish mass, of the bigness of a pin's-head, and of a somewhat dusky surface. After it has been in this state some time, it opens at the top, and divides into six or eight segments; this division shews, that what was at first seen was only the external membrane, or volva, of an included Fungus of the same shape which now appears within, divided into the same number of segments, at the edge, with the volva, and perfectly resembling it in figure. The segments of both are but short, and, the division being carried only a little depth, the body of the volva, with that of the included Fungus, becomes of the figure of the half of a hollow sphere, or of a bellied cup, with dentated edges: the segments are broad, and pointed at the end, and they do not stand erect, but droop, or curl, downwards a little. The inner part of the Fungus is connected to the volva by many tender fibres, and there is a soft, gelatinous matter between them, filling up the intermediate space: in the base of the cup there is, also, contained a quantity of the same gelatinous matter, and in that is immersed a small, round fruit, of a whitish colour, as is all the rest of the Fungus; as the cavity of the plant is now exposed, this liquor by degrees dries away, and, the fruit ripening during the same time, the fibres which connect it to the base of the plant, and those which fasten the plant itself to it's volva, wither; and, the connection between the plant and it's volva being thus entirely dissolved, when the fruit is perfectly ripened, the hollow base of the plant rises into a convexity, and the whole cup does the same, the volva still retaining it's place and figure. The inversion of this cup is instantaneous, and, the connection between the fruit and it's base having been already broken, the consequence of it is, that the fruit is thrown up to a considerable distance entire, in which state it remains till, it's outer membrane being dissolved, the seeds are at liberty to grow. The inner cup of the plant, thus inverted on the volva, gives the appearance of two

segments of spheres, applied in the cut parts one to another; but this it retains only a very little time, it soon becomes flaccid, and sinks into the volva again, and they both decay together. The fruit cut open, and examined with a good microscope, is found to be composed of a membrane, forming one cell, which is, in great part, hollow. To the upper part of it's inner surface are affixed the antheræ, which appear like globules of dust, but are of an oblong form, and the rest of it's cavity is filled with roundish, white seeds.

This species is common, in many of our woods, on the stumps of old trees, and on the dead sticks that lie about among the leaves. I have frequently met with great clusters of it in Cane-wood, in October and November. It appears like little white blisters on the surface of the wood.

2. *Carpobolus segmentis longioribus.*
The Carpobolus with longer segments.

The first appearance of this plant is much like that of the former, a mere tubercle, of a whitish colour, and somewhat dusty surface: as soon as it opens, however, it shews itself to be a very different species. The segments of the volva are longer and narrower, and the inner cup or body of the Fungus is divided in the same manner, and is of a beautiful yellow colour, which, with the white of the volva every-where surrounding it, has a very pretty effect. The fruit, which lies at the bottom of the cup, is small and round. The whole plant is not more than a twelfth of an inch in diameter at the rim, and of about the same depth, being nearly the half of a hollow sphere. When the fruit is ripe, the cup, or hollow body of the Fungus, turns inside out, and, becoming instantaneously convex, darts the fruit from it to a considerable distance. The fruit is brown, and of the size of a small pin's-head, round, and full of minute, round, whitish seeds. This species is less frequent with us than the former: I do not remember to have observed it any where, except in Charlton-forest in Suffex, where it is not uncommon about the dead stumps of trees. Micheli describes it under the name of *Carpobolus aureus volva albida, fructu obscuro, seminibus albidis subrotundis.*

3. *Carpobolus segmentis undulatis.*
The Carpobolus with undulated segments.

This is the most elegant and beautiful of all this genus. It appears at first in form of a little red pustule, no bigger than a pin's-head: a thousand of these are often seen together on a stick or rotten board. From this it expands at the top, and the volva and cup itself are both divided at their edges into segments, six or eight in number, very short, and undulated at the edges; in the center of the cup lies the fruit, which is round, and of a dusky purple, all the rest of the Fungus being of a bright vermilion colour. When the fruit is ripe, it is discharged with violence, in the same manner as from the other species. This is frequent, in the woods in Leicestershire, on rotten sticks of all kinds, but it's smallness has made it, like the others, little observed or regarded.

These are all the known species of this elegant little plant; from the descriptions and characters of which it abundantly appears, that they are not of the lycoperdon kind. If the inner and outer cup were composed of two contiguous membranes, and made but one common volva, which, separating afterwards, raised the body of the Fungus with the upper membrane, it would resemble, in that respect, the stellate lycoperdon; but this, though it appears to have been understood to be the case, is not so: the two cups are, from the beginning, two separate bodies, not as in the volva of those Fungi, the two membranes of one substance.

F U N G I.

Class the Third Genus the Sixth.

C Y A T H I A.

CYATHIA is a genus of Fungus consisting of a hollow conic, cylindric, or hemispheric body, covered with a thin membrane at the top, and containing in its cavity several roundish fruits, of the nature of the single one of the carpobolus, each affixed to the inner surface of the cup by a fine short filament.

These plants produce distinct male and female flowers, both within the cavity of the fruits. The male flowers consist of single antheræ, adhering to the upper part of the inner surface of the fruit; the rest of its cavity is filled with seeds, enveloped, while unripe, in a mucilaginous matter.

Linnaeus makes the peziza of Dillenius of the same genus with this, but erroneously; the pezize have, indeed, the external cup-like shape of the Cyathia, but they have nothing of its manner of fructification.

1. *Cyathia elatior campanulata.*

The taller, bell-shaped Cyathia.

This is the most frequent with us of any of the species of this genus. It adheres to the substances it grows on, by means of a fibrous root, variously divaricated; from this there first arises a roundish oval or irregularly figured tubercle, of about a fourteenth of an inch in diameter, on which the plant seems to be fixed, as on a base, or pedicle; from this it rises in the form of a bell, but somewhat too long for its breadth to be exact in that form; its bottom is narrow, and from this it gradually expands and increases in width to the top, where it is a third of an inch, or more, in breadth, and its verge is usually, when ripe, turned down a little, and undulated. While young, it is covered at the top with a fine thin membrane, which seems strained over it as a bladder over the mouth of a glass. This membrane soon after cracks in the middle, the cracks running four ways, in the opposite directions, and, soon after, the segments curl up and wither, so as entirely to disappear. When this membrane bursts, the mouth of the Fungus expands, and its cavity is found to be filled almost to the top with fruits; they are of a roundish figure, and are so large, that twelve or fourteen of them fill up the whole cavity of the bell: they are each affixed to the sides or base of the Fungus by its own particular pedicle, which, when they are mature, wither and let them loose. The whole plant is of a dusky blackish colour. The fruit cut open, while young, seems a mere mass of fungous matter; but, if opened, when near maturity, antheræ, like those of the other Fungi, will be found adhering singly, each on its own filament, to the internal part of the surface at the top, and the rest of the cavity is filled with a glutinous matter, in which there are lodged a great quantity of oval seeds. The double microscope is the most useful in these examinations, and, as the glutinous matter is too thick to be conveniently viewed by this in its natural state, it may be diluted with a little water, and the seeds will then be distinctly visible. To see the antheræ, a segment of the upper part of the fruit is to be placed before the largest single magnifier that can be procured: Mr Cuff has furnished me with my glasses, which are excellent.

Most of the botanical writers have described this Fungus, though few of them have had any just idea of its fructification. Micheli discovered the seeds; the antheræ have not, that I know of, been described before. Ray calls it *Fuogus calyciformis seminifer*; Clusius, *Fungus minimus anonymus*; and Tournefort, *Fungoides infundibuliforme semine factum*. It is frequent about the stumps of old gate-posts, and on the stalks of plants trod down and rotting, particularly on the stalks of corn. It is to be found from autumn till April.

2. *Cyatbia campanulata hirsuta elatior.*
The taller, hairy, campanulated Cyatbia.

This is a very singular species. Its root is composed of two or three fibres, which are each divaricated into several parts; from the joining of these at the top, there arises a tubercle of an irregularly oval figure, on the top of which is fixed the cup or bell: this is narrowest at the bottom, and gradually grows wider to the top. It is of a dusky blackish colour, and hairy on the outside; and it's top is covered with a membrane: this splits and disappears, after a little time, and discovers the internal cavity of the Fungus, which is smooth, longitudinally striated, and of a dusky bluish, or lead-colour: a great part of this cavity toward the top is empty, but at the base there are lodged a number of roundish fruits, smaller than those of the former species, and each affixed by it's pedicle. The structure of these within is the same with that of the former, but, as they are lodged deep, the cup, after they are thoroughly mature, cracks and splits all the way down in three or four places to let them out. This species is frequent about old wood in Leicestershire, and has been often met with also in the neighbourhood of London.

Dillenius calls it, *Peziza calyciformis lentifera hirsuta*; and Ray, *Fungus semifer externe hirsutus, interne striatus*. Boccone has it also under the name of *Fungus spermatias caliculatus*.

There are, beside these, three other species of this genus, which will easily be distinguished by their names: they are, 1. The short *Cyathia*, with a broad base. 2. The hemispheric *Cyathia*, with undulated edges, and large black fruit; and 3. The hemispheric *Cyathia*, with a small base. These all agree in their fructifications with the other species. Mr. Doody observes, in Ray's Synopsis of the English plants, that Goodart affirms, that the seeds, as they are called, of these Fungi, when they fall to the ground, hatch in a few days into spiders: but he prudently adds, that he should defer giving his own opinion, as to the truth of it, till he had tried it himself. The truth is, that, beside the fruits found in the cavities of these plants, there is a peculiar species of spider that frequently lays it's eggs there.

F U N G I.

Class the Third Genus the Seventh.

ENCÆLIA.

ENCÆLIA is a genus of Fungus, hollow, and containing in it's cavity separate and naked seeds. The seeds are extremely minute, and the mouth or aperture of the Fungus not covered by any membrane, so that, when mature, they are by the least motion displaced, and thrown upwards in form of powder. These plants produce distinct male and female flowers. The male flowers are anthers, standing singly on very short filaments, and appearing in form of a fine dust on the surface of the hollow of the Fungus. The female flowers we see nothing of, except the seeds, which lie naked and scattered over the surface of the same hollow of the plant, but in separate parts of it. These seeds are of an oval figure, and the anthers are oblong, and much smaller; both may often be distinguished together by a good microscope in the hollow.

Though all the Encæliæ are hollow, they are very variously so; some are very deeply hollowed, so as to resemble a cone set on it's base; some are so lightly hollowed, as to resemble only a saucer; some have pedicles, and others are sessile; and, of those which have pedicles, some have them very short, others very long and slender: some of them are finally wide open at the mouth, and others corrugated, and wider in some other part. From this various form of the hollow of the Encæliæ, some of them resemble segments of spheres, some of ovals, and some of cones; whilst others seem only flat bodies, with their edges turned a little up. Dillenius has confounded this genus with the last, under the common name *Peziza*, and Linnaeus has followed him in this; but the fructifications are so extremely different, that nothing can be more evident, than their belonging to two distinct genera.

1. *Encælia*

1. *Encelia sessilis, extus pilosa, hæmispærica.*
The hæmispæric sessile Encelia, hairy on the outside.

This is a very beautiful Fungus; it adheres by it's base to the substances it grows on, without the least appearance of a pedicle. It is of the size of the half of a large nutmeg, but more rounded, and indeed usually appears to be the half of a tolerably regular sphere. It is composed of a thin, but tough and fine membrane, and is perfectly even at the surface. It's outside is reddish and hairy, it's inside or cavity smooth and of a fine scarlet colour; when it becomes fully mature, however, it appears somewhat less smooth on the surface than it was before, and, on the least motion given it, a fine dust is seen to arise in a column from it, which is the ripe seed dislodged and discharged by the shaking. Examined by the microscope, the whole surface at this time appears covered with particles, some oblong, some oval; the oblong ones are the antheræ, they stand about the verge or on the upper part of the cup; the oval ones are the seeds, and lie mostly nearer the bottom; the antheræ are connected by a short filament to the body of the Fungus; the seeds seem loose, but, if examined by a very powerful magnifier, each is found to have it's peculiar little cell, in which it lies till thus forcibly discharged; a motion of the Fungus is always necessary to the discharging of these seeds; but when they are thoroughly mature, and fit for the immediate propagation of the plant, the motion given it by the lightest breath of wind is sufficient for the purpose. This beautiful species is very common in our woods, and under hedges in many parts of England. On Iwer-heath in Buckinghamshire, and in Charlton-forest, Suffex, I have met with a great deal of it. It grows on old sticks, and sometimes on the ground. Micheli calls it, *Fungoides scutellatum coccineum, intus glabrum, foris ubivis pilosum.*

2. *Encelia lata sessilis marginibus cirratis.*
The broad Encelia, with cirrated edges.

This is an extremely beautiful Fungus. It adheres to the substances it grows on immediately by the base, without the least appearance of a pedicle: from this base it expands itself every way, in a roundish but somewhat irregular form, and lightly hollowed. When fully grown, it is about half an inch in diameter at the top, and about a third of an inch in depth. It consists merely of a fine, tough membrane, of the thickness of a moderate parchment. It is all over of a bright and strong scarlet colour, and always somewhat stronger coloured in the hollow, than on the outer surface: on this outer part there are placed a few, short, fine hairs or cirri, but round the brim there stand a beautiful row of stiff and black ones, very short, moderately thick, and of a glossy surface, these add greatly to the beauty of the plant, and remain erect on it's edge, as long as it retains it's form. It's inside appears of a smooth surface at all times, except when the fructifications are there; in this case it is covered with a kind of fine powder, which somewhat debases it's high scarlet colour. Examined with a microscope, this powder is found to be composed of the antheræ and seeds; the antheræ oblong, and placed near the brim; the seeds oval, and lying in the hollow toward the bottom; at this time a little shake throws them all out in form of a fine dust. This beautiful species is found in many parts of England; it usually grows on old sticks, and decayed trees in woods. I have found it abundantly in some woods near Denham in Buckinghamshire. Ray calls it, *Fungus arboreus acetabuli modo, cavus, coccineus, marginibus pilosis*; and Dillenius, *Peziza acetabuliformis coccinea, marginibus pilosa.*

3. *Encelia sinuosa sessilis.*
The sinuous Encelia, without a pedicle.

Jew's Ears.

This is a much less regular plant, in it's manner of growth, than either of the preceding ones. It arises from a broad base, by which it adheres to the substance it grows on, without any pedicle; from this it expands itself every way, so as at length to form a variously sinuous and undulated substance, somewhat hollowed, and of an oblong, or irregularly roundish figure. It is composed of a single tough membrane, and is often an inch and half, or more, in diameter. It's edges are not even, but high-

er in some places, and lower in others. Its colour is a dusky bluish, approaching to black, and it has often ridges in several parts of it, forming other smaller and irregular figures, roundish, or oblong, and sinuous; these give it much the appearance of the human ear, whence it obtained its English name, Jew's Ears. Its surface is at all times, except when about its fructifications, perfectly smooth; at this period it appears covered with an extremely fine dust scarce perceivable without a microscope, and this dust, when examined with a very powerful magnifier, proves to be regular, oval seeds in vast numbers, and about the edges are often perceived the anthers, single, oblong, very slender, and adhering to short pedicles or filaments.

This species is often met with in the stumps of old trees, and on other rotten wood. But there is another kind of irregular *Encelia* hereafter to be mentioned, under the name of the membranaceous expanded species, which is common on the old water-pipes about Islington, and in the like places, and is pretty constantly received in the shops in its place. It is described by C. Baubine, under the name of *Fungus membranaceus auriculam* refertis five *sambucinus*; and other authors call it, *Auricula Judæ*, and *Fungus sambucinus*, from its often growing on the elder. There is, however, a yellow *Encelia*, more frequent on the elder, which many will have to be the true *auricula Judæ*: it is much recommended against quinies and sore throats. Physicians do not often prescribe it; but the common people very frequently use a decoction of it in milk for these purposes, and it is said with success. An infusion of it in water is also recommended by many authors, as a collyrium against inflammations of the eyes.

4. *Encelia conica pediculo brevi.*
The conic Encelia, with a short pedicle.

This is a very small, but a very pretty Fungus; it grows to about a third of an inch in height, and is throughout of a whitish colour and smooth. Its root consists of two or three slender fibres; from these arises a very small pedicle of about an eighth of an inch high, and at the top of this stands a cup of an inverted conic figure, formed of a thin membrane, and with its pedicle perfectly resembling a common wine-glass, with a short foot. Its cavity is, when in the state of fructification dusty, and, on disturbing it, sends up a fine powder: this powder consists partly of anthers, which were placed at the edge of the cavity, and partly of oval seeds which were lodged in all the other parts of it. This species is common on rotten sticks in our woods, some times on dead leaves. Micheli calls it, *Fungoides minimum infundibuliforme, album, hederæ foliis imitans*.

5. *Encelia pediculo longissimo, ore lato.*
The long-stalked Encelia, with a broad opening.

This is a very singular Fungus; its root is tuberous and perennial, of a black colour on the outside, and whitish within. From this there usually grow six or eight plants together; the pedicle of each is of the thickness of a wheat-straw, and about two inches in length; toward the top it begins to expand, and, in fine, forms a cup very wide at the mouth, not very deep, and of a conic figure with the base upward. The colour of the whole plant is a dusky brownish yellow; its cup is smooth on the inside, except when in the state of fructification; then it is somewhat dusty, and on a shake will discharge its dust or powder, like the rest of this genus. The anthers, which compose that part of this powder which is nearest the top of the cup, are oblong; the remainder of it is formed of oval seeds, placed in little shallow cavities: these seeds are larger than those of several other species, but it requires a very good microscope to discover the plainest of them with any degree of accuracy. This species is less common than any of the others. I have once or twice met with it in Charlton wood, between Greenwich and Woolwich. Micheli calls it, *Fungoides cepitiformis infundibuliforme, fulvum, radice nigra, tuberosa, perenni*.

The other species of *Encelia* will easily be distinguished by their names: those without pedicles are, 1. The yellow, deep *Encelia*. 2. The white, deep *Encelia*. 3. The angular, shallow *Encelia*, the *pezita* of Pliny. 4. The curled, undulated *Encelia*. 5. The yellow, aculeated *Encelia*. 6. The white, aculeated *Encelia*. 7. The white *Encelia*, hairy on the outside. 8. The broad, scarlet *Encelia*. 9. The deep,

deep, scarlet Encelia. 10. The thick, rough Encelia. 11. The furrowed, hemispheric Encelia. 12. The black, rough Encelia. 13. The lenticular Encelia, with hairy edges. 14. The purple, shining Encelia. 15. The little, yellow Encelia. 16. The little, scarlet Encelia. 17. The little, brown Encelia. 18. The pear-shaped Encelia, with serrated edges. 19. The scarlet, pear-shaped Encelia, with a margined edge. 20. The acorn-cup Encelia. 21. The great, expanded, membranaceous Encelia. Of the Encelia which have pedicles are, 1. The Fungiform, curled Encelia. 2. The Encelia, with a very thick pedicle. 3. The undulated Encelia, with a long pedicle. 4. The funnel-shaped Encelia. 5. The ramified, tall Encelia. 6. The tall Encelia, white without, and red within. 7. The grey, short Encelia. 8. The little, scarlet, bending Encelia. 9. The little, white, cup Encelia. 10. The great, open Encelia. 11. The black Encelia, with a brown spotted mouth.

F U N G I.

Class the Third. Genus the Eighth.

CLAVARIA.

CLAVARIA is a genus of Fungi, consisting of a single, oblong, erect body, or stalk, of an uniform surface, and of a soft, fleshy, and succulent structure.

Vaillant first established this genus of Fungi, but he gave no characters of it. Dillenius has confounded it with a number of others, under the name of Fungoides; and Linnæus has taken in, under it, the Coralloides of Tournefort, and others, which are of a distinct genus, as is evident from their structure and fructification. The Clavariae produce distinct male and female flowers. The male flowers are antheræ, adhering four or more in a cluster to the same filament: the female flowers have nothing distinguishable, except the seeds which are round, and are lodged in shallow cavities. The male and female flowers are both produced on the surface of the plant; the male flowers only on the upper part, the female only on the lower. Of the Clavariae some are very tall and slender, others thicker and shorter; some are nearly of an uniform thickness all the way, others are gradually smaller from the base to the extremity, where they terminate in a point; but the far greater part are smallest at the bottom, and large toward the top. They some of them grow single, others in clusters; and, finally, some of them are hollow, but the far greater part are solid.

1. *Clavaria simplex durior apice obtuso.*

The harder, simple Clavaria, with an obtuse top.

This has for it's root a little tuberosity of a blackish colour, from which it rises in form of a small club; it's lower part is roundish, and of the thickness of a small straw; in this form it runs up half it's height, but from this part upwards it swells into twice that thickness, and terminates at the top in an obtuse point. It's colour is black; it's substance fleshy, but somewhat hard; it seldom grows quite straight, and it's height is from an inch and half to more than two inches: in it's mature state, if it be carefully drawn through the fingers, there will a fine powder be left on them, which, examined by the microscope, appears to be composed of a mixture of oblong and mutilated particles, and of pretty regularly round ones. The plant itself, carefully examined, will be found to have the oblong ones growing all round it's upper part, and adhering in little clusters to the ends of filaments, four or more to each filament; these are the antheræ, or male flowers, and these alone occupy the top of the plant: lower down as far as to the bottom of the thick part, there lie the other round particles or seeds in clusters, four or more together.

The plant is common in many parts of England; in autumn among high grass. I have found it abundantly about Denham in Buckinghamshire, and elsewhere. Ray calls it, Fungus ophioglossoides niger; and Vaillant, Clavaria ophioglossoides nigra.

2. *Clavaria cepitosa mollior apice obtuso.*
Softer, blunt-pointed, cepitose Clavaria.

This has for it's root an irregular tuberosity, of the bigness of a horsebean, or larger, and usually flattish, and with ragged edges; from this there generally arise six or eight plants pretty close to one another. They grow to about an inch and half high, and are of a soft, fleshy structure, and yellow colour. Every plant is, at the lower part, of the thickness of a large packthread; but from a third of the height, or thereabouts, it begins to expand, and continues larger till near the top, where it again diminishes a little, but ends in an obtuse point. The plant is solid, and of a fungous texture; on it's top, in the feeding-time, stand antheræ in clusters, and all the way down it's thicker part are lodged the seeds in little clusters also. The antheræ are oblong, and of very short duration. The seeds are round, and remain longer: in general however, the person, who would examine the fructifications of the bodies of this class, should either carry his microscope about him to do it on the spot, or take them home with the earth about them, while yet in an unripe state, that they may grow up and fructify under his eye. The English botanists know a single, yellow *Clavaria*; but this tasted one has not been mentioned by any author, except by Micheli, under the name of *Clavaria cepitosa*, media, lutea. It is found in September and October on Putney heath, and in some other places about London, but it is not very frequent.

3. *Clavaria fistulosa apice acuto.*
The hollow Clavaria, with a sharp point.

This is extremely different from the other *Clavariæ* in it's form. It's root is a flattish tubercle, of the breadth of a shilling, and of about a sixth of an inch in thickness; from this there usually arise five or six plants standing very close to one another. Each plant is about two inches high, and at the base, where it is thickest, is about an eighth of an inch in diameter. From this part it grows up gradually smaller all the way, and at the top terminates in a point. It's colour is white, it's substance soft and fungous; it is naturally round, but is easily pressed flat in any part, and when cut, or broken, is found to be hollow. The antheræ are oblong, and stand in clusters about the tops of the plant: the seeds are round, and are placed also in little clusters, all the way down the surface to the very base. It is not common with us, but I have observed it in the pastures about High Wickham in Buckinghamshire, and about Catthorp in Leicestershire, pretty plentifully. It grows among the high grass, and is usually met with in September, October, and November.

The other species of *Clavaria*, after the descriptions of these three, will easily be known by their names: they are, 1. The great, yellow, club-headed *Clavaria*. 2. The great, white, club-headed *Clavaria*. 3. The great, reddish, curled *Clavaria*. 4. The broad-headed, yellow *Clavaria*. 5. The green, ophioglossoid *Clavaria*. 6. The yellow, ophioglossoid *Clavaria*. 7. The little, yellow, *Clavaria*. 8. The ophioglossoid *Clavaria*, with a hairy pedicle. 9. The snow-white ophioglossoid *Clavaria*. 10. The white, cepitose, solid *Clavaria*.

F U N G I.

Class the Third. Genus the Ninth.

MERISMA.

MERISMA is a genus of Fungi, consisting of stalks variously divaricated and ramose, erect, and terminating at the extremities either in very small and flat expansions, or in slender twigs, of an uniform surface, and soft fleshy texture.

These Fungi produce distinct male and female flowers, on the same parts of their surface. The male flowers consist only of oblong antheræ, which stand single, each on it's separate filament, which is very short. The female flowers offer no part to view but their seeds; these are of an oval figure, and are placed among the antheræ singly,

singly, and in less number than in almost any other kind of Fungus. Both the male and female flowers stand on the tops of the branches in the Merisma; whereas, in the clavaria, the male flowers occupy the upper parts of the plant, and the female the lower. In all the Merisma, I have yet had opportunity of observing, the antheræ stand single, and the seeds also are placed in the same manner: in all the clavaria the antheræ are placed four or more on every filament, and the seeds are disposed in the same sort of clusters on the plant. Tournefort and others call this genus Coralloides, from the resemblance of some of the species to the corals. Vaillant calls it, Corallo-fungus. Dillenius, Fungoides; among many other genera, which he has improperly placed together under that name. Linnæus comprehends both this and the former genus under the name of Clavaria. We have thought it necessary to separate distinct genera; and as the term Coralloides has been applied by Dillenius to a genus of the mosses, and the other names seem little expressive of the characters of the plant, we have called it, from its frequent divisions and ramifications, Merisma, from the Greek, *μερίζω* to divide.

1. *Merisma ramulis teretibus bifidis.*
The round and bifid-branched Merisma.

This is an extremely elegant Fungus. Its root is a tuberous body, of the size of a nutmeg, of a whitish colour, and very uneven surface. From this there usually grow three or four separate and distinct plants: each rises with a single, roundish stem, of the thickness of a large packthread; and this grows larger, as it becomes higher, and, at the height of about half an inch, or less, divides usually into two, sometimes into three, parts; each of these afterwards divides into others, and those ramify again in the same manner; the extremities are usually pretty regularly bifid, and the rest of the plant is, in general, divided in the same manner. The branches are all round; and the whole plant is about two inches, or more, in height, and is of a fleshy, soft substance, and of a pale-red colour. At the extremities of the branches stand the antheræ, on their filaments, and, among these, the seeds are disposed; they are oval, and lie in hollow sockets of the same form. The stamina arise from the interstices between these. This elegant species of Fungus grows annually, in considerable plenty, in the Arbor Vitæ Grove at Goodwood, where once the greatest of all patrons of botany in England has often admired its structure and fructifications.

2. *Merisma ramulis compressis varie dissectis.*
The flat-branched, variously-divided Merisma.

The root of this species is small and tuberous; from this it usually arises single, with a roundish stem, of the thickness of a man's little finger; this, however, scarce grows to any height single; it divides, almost immediately from the base, into three, four, or five branches. These go up but a little way, before they divide, each into several others, and those ramify again; the ramifications, at length, terminate in somewhat broad and variously-dissected extremities: all the branches are of a compressed, or flattened figure. The plant grows to three or four inches in height, and its colour is a pale yellow. All about the tops of the ramifications stand, at the proper period of its growth, antheræ, of an oblong figure, supported each by its single stamen, arising from the interstitial spaces between certain little cells, in which are placed oval and very minute seeds, one in each cell. We have this Fungus in the pastures of Northamptonshire, and in many other parts of England; it is very common in September. It is a very beautiful one, but it is but of short duration. Tournefort calls it Coralloides flavum; and J. Bauhine, Fungus ramosus flavus.

3. *Merisma barbata ramulis teretibus.*
The bearded Merisma, with round branches.

This is a very singular and very elegant species. Its root is a small, tuberous body, from which it arises with a very thick and round stem; this increases in height till about an inch high, where it is often not much less than an inch in diameter. From this part it divides into a multitude of round branches, which again divide into others, and these again into yet smaller, so that, at the extremity, the branches are not thicker than
R hairs,

hairs, and in an innumerable quantity. The whole plant grows to about four inches in height, and the tufted top is often more than three inches in diameter; the branches all run up round to the very extremities. The whole is of a fleshy, soft texture, and of a whitish colour, with more or less tinge of red in it: about the extremities there stand a great number of anthers, and the seeds are disposed, as in the other species, among them: they are, however, so extremely minute, that a very powerful magnifier is necessary to get the sight of them. I have not met with this species in any more than one place in England, which was near Mendip-hills. Tournefort has described it under the name of *Coralloides dilute purpureascent*.

The other species of *Merisma* will easily be distinguished by their names: they are, 1. The white, large, flat-branched *Merisma*. 2. The great, ramose, white *Merisma*; this is of the form and size of a colly-flower. 3. The little, dusky-yellow *Merisma*. 4. The very small, yellow *Merisma*, found on the barks of trees. 5. The glutinous, yellow *Merisma*. 6. The silvery, white, fine *Merisma*. 7. The short, horned, violet-coloured *Merisma*. 8. The short, flat, and broad-branched, Virginian *Merisma*. 9. The porcupine *Merisma* of Boccone. 10. The setaceous *Merisma*. 11. The buck's-horn *Merisma*. 12. The red buck's-horn *Merisma*. 13. The little, capillary, violet *Merisma*. 14. The blue, gelatinous *Merisma*. 15. The cristated, verrucose *Merisma*. 16. The white *Merisma*, with purple tops. 17. The fiery-red *Merisma*, with short ramifications. 18. The broad-branched, flesh-coloured *Merisma*. 19. The yellow *Merisma*, with short, expanded ramifications. And, 20. The grey, corniculated *Merisma*.

F U N G I.

Class the Third. Genus the Tenth.

X Y L A R I A.

XYLARIA is a genus of Fungus, consisting of branches, or stalks, of a woody structure, tough, firm, and hard, and of an uneven surface.

These Fungi produce separate male and female flowers. The male flowers consist only of anthers of an oblong figure, supported on very short stamina, and are placed on the upper parts only of the plant. The female flowers are lodged in cavities, or cells, in the lower parts of the plant, and consist of placentae, of a roundish figure and gelatinous substance, to which are affixed great numbers of roundish seeds.

Dillenius confounds the plants of this genus with those of the former, and of several others, under the name of Fungoides. Micheli calls the genus *Lichen agaricus*. We have given it the name *Xylaria*, from the Greek *ξύλον*, wood, these being the only Fungi that are truly of a woody texture. The fructification of one of the species of this genus is described very accurately in the Memoirs of the Paris Academy, and Micheli has described all the parts of it, as we have seen them; but he mistakes the farina for the seed, and *vice versa*, and has figured numbers of the seeds, adhering to one another, in form of a necklace, by means of the glutinous matter of the placenta, under the name of a peculiar configuration of the farina.

The cells, in which the placenta with it's seeds are placed, are, in some species, round, in others cylindric; in some they are buried wholly in the substance of the plant, and have only an aperture corresponding with it; in others they protuberate from within, a little way out beyond the surface, and, in some others, they are tubercles affixed to the plant, and not penetrating at all into it's surface: some of the species are simple, some divaricated, and some branched.

1. *Xylaria compressa extremitatibus divaricatis.* *The flattened Xylaria, with divaricated extremities.*

This is one of those Fungi which, in their different states, put on very different forms; and it has, like some others, been, for that reason, described under different names, as several different species. It grows to two inches, or more, in height, and is, in the broadest part, sometimes a third of an inch, or more, in diameter. It rises with a single stem, of a compressed shape and rough surface; this sometimes runs up single, tapering all the way, till it terminate in a point; sometimes also it is roundish,

or very little flattened; more usually, however, it divides towards the top into two or more branches, which, as they extend themselves in length, increase also in breadth, and, after they have thus expanded themselves into a sort of palmated form, terminate in two, three, or more divisions, resembling fingers. This is the most usual state of the plant, but it occasionally assumes many other forms, and frequently, in a cluster of twenty or thirty plants, some will be so very unlike the others, that, if they did not grow together, it would not be easy to know them for the same plant from their shape. Whatever be the form of the plant, however, it's colour and texture are permanent; it is tough and hard as wood, and is black all the way up to the extremities, which are white and dusty, the rest of the surface is often, in many parts, covered with roundish tubercles. The dusty matter on the white tops of this plant, when examined by a microscope, proves to be no other than a vast number of antheræ, of an oblong figure, standing singly, and adhering to short filaments; the tubercles on the other parts of the plant are of a roundish figure: they have each a small aperture in the center, and an hollow forming the cells in which the placenta with the seeds lie. The placenta are small, roundish, and of a glutinous structure, and the seeds either simply cover the surface of them, or adhere to one another, by means of this glutinous matter, in long series; propagated from the several parts of the placenta.

This species is very frequent with us on old wood, and the stumps of decaying trees. Ray calls it *Fungus ramosus, compressus, niger, apicibus albidis*; and Tournefort, *Coraloides ramosum, nigrum, compressum, apicibus albidis*.

2. *Xylaria teres, pediculata, cespitosa, simplex.*

The cylindric, simple, pediculated, cespitose Xylaria.

This singular plant rises to about an inch, or little more, in height. It usually grows in clusters, twenty or more of the plants near one another; but each is distinct, to the base, and evidently springs from it's own separate root. It consists of a pedicle, round, and of the thickness of a small packthread, and about a quarter of an inch in length; on the summit of this stands an oblong, cylindric body, three quarters of an inch, or more, in length, of the fifth of an inch, or thereabout, in diameter, and obtuse at the end. It is not all the way of the same uniform thickness, but appears tumified in certain places at small distances, in the manner of a pod, with large seeds in it, which mark the places where they are, by swelling up that part of the pod. All over the surface of this body there stand little protuberances, with perforations in them. These open into round cavities, in which are the seeds of the plant, affixed to a roundish or oval, gelatinous placenta; the antheræ are less distinct than in the former species; they form a kind of brown powder about the top of the plant, and, when examined with a large magnifier, are found to be oblong bodies, affixed to the surface of the plant by short stamina. In the specimen I examined, I found many of these on the lower, as well as upper part of the plant; but these latter were all loose, so that it is not certain whether they originally grew there, or were fallen from the top.

This species is not common with us: I found it once on a stump of a tree in Charlton-forest, and once on an old gate-post near Loughborough in Leicestershire. Ray calls it *Fungus piperi Æthiopico similis sive digitatus niger*, and supposes it to be the *Hypoxylum sive excrementum ligni putridi fungosum* of Mentzelius, but erroneously.

3. *Xylaria teres ramosa.*

The cylindric, ramose Xylaria.

The root of this species is extremely long; it creeps under the surface of the ground to two feet, or more, in length, and is tough, firm, black in colour, somewhat compressed, and of the thickness of a large packthread: from this, at certain distances, there rise plants, which grow to near two inches in height. The stem is usually single, and thicker than the root it rises from; it is round and rough on the surface. This divides, at the height of half an inch, into several branches, which again divide into others, and are usually bifid at the ends; they are round all the way up, as at the base, and are black from the base to near the extremities, where they are of a pale reddish colour. These tops are dusty, and, when examined, this dust is found to be composed of antheræ, of an oblong figure, each affixed to it's own filament. The little protuberances of the rest of the stalk are the coverings of so many cells, which contain each it's roundish placenta,

placenta, and on it a vast number of minute seeds. I met with this plant in Charlton-forest, and never saw it elsewhere. Micheli seems to describe it under the name of *Lichen agaricus terrestris, digitatus, niger, apicibus alborufis, radice longissima repatrite*.

The other species of *Xylaria* will easily be known by their names: they are, 1. The small, black, cupressiform *Xylaria*, with white tops. 2. The yellow, military *Xylaria* of Vaillant; and, 3. The brown *Xylaria*, with red tops.

F U N G I.

Class the Third. Genus the Eleventh.

ÆCIDIUM.

ÆCIDIUM is a genus of Fungus, consisting of a tuberos, or merely crustaceous matter, of a tolerably firm structure, and marked with round protuberances on the surface, which are the coverings of certain cells, in which both the male and female flowers of the plant are produced, though separate from one another. The male flowers are composed of single antheræ, each adhering to it's particular filament, which is very short. The antheræ are oblong and tumid, and are placed on the upper part of the internal surface of the cells. The female flowers consist of a placenta, of a fungous substance, all around which are placed small, roundish seeds, each in it's separate cell. Micheli is the only author who has discovered that there was any such genus of plants as these, though some of the species are considerably large, and, one would think, could not be overlooked: he has confounded them, however, with the *Xylaria* before described; the cells, indeed, are of the same nature with those of that genus, but, in all other respects, the plants are as different as those of any two genera can be: nor is even the fructification, when accurately examined, at all alike, as appears from the general characters. We have called this genus, distinguished by it's peculiar cells, *Æcidium*, from the Greek *αἰδίων*, cellular.

1. *Æcidium tuberosum reniforme.*

The tuberos, kidney-shaped Æcidium.

This singular plant arises from a broad and long base, from which it extends itself into a tuberos mass, of an inch and half in length, and an inch in diameter, and in shape much resembling a kidney. Sometimes a cluster of these grow together, and form a mass of a variously botryoide surface; but more usually they grow single and separate, though very near one another. It is of a tolerably firm structure, but light; it's surface is variously elevated, and is ornamented with a number of wart-like protuberances, rising but to a little height, flat at the top, and frequently with a lesser protuberance in the center. These tubercles are the coverings of so many cells, which are of a roundish figure, and contain the antheræ, affixed to their upper internal surface, and the seeds affixed to placenta in the lower part of the cavity. The antheræ are oblong, the seeds very small and round. The colour of the whole plant is a dusky brown, sometimes blackish. We have it frequent in some of our woods, growing to the dead stumps of trees near the root. Micheli calls it *Lichen agaricus, crassus, bovinum renem veluti representans, niger et quasi deustus*. I have five specimens of it, taken from the root of a holly, in the garden at the Spaniards at Hampstead. Insects of various kinds are apt to eat their way into it, and their exuvie, and other remains, are often found in it, sometimes almost at the center, sometimes nearer the surface. The holes made by these creatures are to be carefully distinguished from the cells of fructification of the plant. I have never seen any of it quite black, but the burnt-look, described by Micheli in his name, is very common in it, and very singular.

2. *Æcidium crustaceum cellulis maximis.*

The crustaceous Æcidium, with very large cells.

This is an extremely singular plant: it is of a soft, fungous texture, and of a dusky brownish colour. It extends itself irregularly, in form of a thick crust, over the roots and stumps of decaying trees. It's dimensions are uncertain, but it's thickness is usually about

about a fifth of an inch. The surface is full of large and hemispheric tubercles, with an opening at their top. These lead into the cells in which the parts of fructification of the plant are disposed; the antheræ occupy the upper part, hanging by their separate stamina, from the internal surface; the rest of the cavity is filled by a placenta, to which adhere a great number of extremely minute seeds. We have this plant pretty frequent in our own woods, about the stumps and roots of decayed trees; but it is not regarded any more than the other species of this singular genus, many of which, doubtless, have fallen in the way of our botanical writers many times, but, from their having very little of the appearance of plants, have been overlooked by them. It is frequent in Hornsey-wood toward the latter end of November.

3. *Æcidium crassius superfcie Splendente.*

The thick, shining Æcidium.

This species adheres to the substance it grows on by a very broad base, from which it extends variously, sometimes into a semicircular figure, sometimes less regularly; it's surface is usually full of large protuberances, and it's thickness frequently as much as it's length. In shape it often much resembles the common agaric, but it's substance is harder, and it's colour black. It's whole superficies is smooth and glossy, and seems as if covered with a glutinous fluid; but there are observed in it, when examined closely, a number of little prominences, less glossy than the rest; they are of a roundish figure, and have each a perforation in their center: these lead into deep, cylindric cells, the internal surface of which, in the upper part, is covered very thick with stamina; the rest of the cavity contains an oblong, cylindric placenta, to which adhere a multitude of seeds. This is scarce with us: I found it once on Mendip-hills, growing to the stump of a decayed oak. The mass was as big as a man's fist, and semicircular: near it there were others, less regularly shaped. Micheli calls it *Lichen agaricus, tuberosus, niger, agarici officinalis facie*.

The other species of the *Æcidium* will be easily distinguished by their names: they are, 1. The white, thick *Æcidium*: 2. The black, thinner *Æcidium*, growing under the barks of trees. 3. The hairy, grey *Æcidium*, growing on old oaks. 4. The small, blackish, bullated *Æcidium*, growing under the barks of decayed trees. 5. The white, scutated *Æcidium*, growing on the ground. 6. The tufted, black *Æcidium*. 7. The tufted, red *Æcidium*. 8. The smaller, tufted, pale-red *Æcidium*. 9. The ferrugineous, tufted *Æcidium*; and, 10. The dusty, black, tufted *Æcidium*: all these latter species grow either in the clefts and fissures of old trees, or between the bark and the wood.

F U N G I.

Class the Third. Genus the Twelfth.

CERATOSPERMUM.

CERATOSPERMUM is a genus of Fungi, consisting of a tough, fungous matter, disposed into more or less regular figures, and producing slender bodies, in form of crescents, for the reception of the parts of fructification: These plants produce both male and female flowers separate, but placed one among another. The male flowers are antheræ, of an oblong form, supported singly by short and slender filaments. The female flowers we can discover nothing of, except the seeds, which are placed singly among the antheræ, each in it's separate little cell.

1. *Ceratosperrum orbiculare sessile.*

The orbicular Ceratosperrum without a stalk.

This is a very small, as well as a very-singular plant. It adheres to the substance it grows on by a broad base, and from this it expands itself every way a little, till it has formed a semicircular body, two thirds of which is the base, and is fixed down; the remainder is a little elevated, and forms the edges, so that the whole makes a kind of dish a little hollowed: it's substance is tough and firm, it's colour black. In this state it remains a considerable time; but, when the period of it's fructification comes on, it

produces, from the several parts of it's upper surface, oblong bodies, thickest in the middle, and pointed at each end, and bent into the form of a horn, or crescent. These adhere to the plant by one of their points, and the other usually hangs over the edges of it. On the thicker part of this crescent, or horn, there stand a vast number of single antheræ, supported by short filaments, and, among them, a great number of very minute oval seeds, each lodged in it's cell. The whole plant does not exceed the diameter of a large pea. I have it very frequent in our woods in February and March, on the stumps of old trees, and on rotten sticks. Micheli calls it *Ceratosperrum nigrum minimum*, *discoides*, *e diversarum arborum ramorum emortuarum corticibus*, et præcipue *corylo*, *erumpens*.

2. *Ceratosperrum pediculatum cavum.*
The hollow, pediculated *Ceratosperrum*.

This is as small a plant as the former, but somewhat more singular in it's figure. It rises with a short, thick, and rounded pedicle, which, at it's top, expands into a semi-circular body, somewhat hollow, and resembling a kind of cup. The whole plant is not more than a quarter of an inch high. It's cup, or hollow part, is scarce a sixth of an inch in diameter. It is common to meet with the plant in this state; but it's fructifications are more rarely seen. The whole plant is white, and of a tough fungous substance, the edges of the cup even and smooth, and the whole plant beside a little hairy. When in flower, there arise a vast cluster of little horns, or crescents, forty or more, from the whole internal surface of the cup; they are fixed by one end, and are of a beautiful scarlet colour, so that, with the white of the cup, they make a very beautiful appearance. The two extremities of these horns are, at all times, naked, but the middle appears dusky, and, when examined by a powerful microscope, is found to be covered over partly with antheræ, partly with seeds. The seeds are oval, and lie in small cells; the antheræ are oblong, but more tumid than those of the former species. This is frequent with us in woods, on the stumps of old trees. Before it is in it's state of fructification, it much resembles some of the common cup Fungus's. Micheli has also described this: he calls it *Ceratosperrum minimum cornucopiodes*.

3. *Ceratosperrum planum crassissimum.*
The flat, thick *Ceratosperrum*.

This is a subaqueous plant. It extends itself over old wood that is laid in rivers, and over many other substances there, in form of a thick crust. It assumes no particular, determinate figure, but spreads in every direction where it has room. It is of a fungous substance, of a brownish colour on the outside, and white within, and is usually full of cracks and holes; the surfaces of which are of the same colour with the external surface of the plant. In this form it will spread sometimes to ten or twelve inches every way, and is often more than half an inch in thickness. It's surface is smooth and lubricous, as most other things are that lie long under water. From every part of it's surface there grow horns, or crescents, of a dusky-brownish colour, about a tenth of an inch in length, and of the thickness of a small hair; on the surfaces of these, about the middle, there lie seeds of an oval form in their cells; the antheræ I have not yet seen, though I have, more than once, sought after them. We have this species on the boards at the mill-tails in Buckinghamshire in many places.

These are all the species of the *Ceratosperrum* hitherto known.

F U N G I.

Class the Third. Genus the Thirteenth.

I S A R I A.

ISARIA is a genus of Fungi, consisting of stalks of a simple or ramose figure, formed of circular series of fibres, arranged round a cavernous axis, and each fibre having at it's end a capsule, in which are the fructifications of the plant.

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The *Isaria* produce distinct male and female flowers, both contained in the cavity of the same capsule, or cell. The male flowers are antheræ, standing in clusters, on very short stamina. The antheræ themselves are of a tumid figure. The female flowers consist of a placenta of an oval figure, and gelatinous matter; to all parts of which adhere round seeds. The *Isaria* are all very small plants, and the surface of them all is alike of a beautiful granulated structure, it being all composed of globular bodies, applied as closely as possible to one another.

Micheli met with two species of this genus, which he very justly distinguished from all the other Fungi, under the name of *Puccinia*. Whether the plants be examined, however, were not mature, or by whatever accident it happened, his account of their fructifications is very imperfect. We have called the genus *Isaria*. From the Greek, *is*, a fibre, these being the only known Fungi that are composed wholly of fibres, supporting the fructifications.

1. *Isaria ramosa varie divisa.*
The variously, divided, ramose *Isaria*.

This is an extremely beautiful little plant. It rises with a single stem rounded, and of the thickness of a small packthread; this runs up single to about a third of its height, and from thence begins to divide into a number of lesser branches; these ramify again, and at length the whole forms a kind of little bush, with the branches, all erect, and terminating in obtuse points. The whole plant is of a deep orange colour, and its height is more than half an inch. The surface of the branches, examined with a microscope, appear beautifully and regularly granulated: when cut transversely, and examined, they are found to consist of a cylindric, cavernous core, around which are ranged series of fibres very short and slender, each, at its extremity, supporting an oval body, which is the receptacle of the fructifications. This body, carefully opened, is found to contain a placenta of a gelatinous substance, and roundish figure, on which there lie great numbers of seeds. The surface of the cavity in many places also appears thick, covered with a kind of dust, which, when carefully examined, appears to consist of antheræ affixed in clusters to small stamina.

This beautiful Fungus is common in Charlton-forest in Sussex, growing to the decaying bodies of beeches and other trees. I never saw it elsewhere, nor has any author described it.

2. *Isaria simplex.*
The simple *Isaria*.

This is a very small plant, scarce exceeding, at its utmost growth, a quarter of an inch in height, or half as much in diameter. It grows to old wood, by a broad base, from which it rises smaller all the way, to the top where it terminates in an obtuse point. It is seldom quite straight, usually bowed, or bent a little: its colour is a dusky whitish; its surface granulated; when cut transversely, it appears to be formed in the same manner as the former, of series of rays or fibres issuing from a cone or central body, and each terminated by a capsule at the surface; we have this on dead sticks, and sometimes on old gate-posts in damp woods.

Micheli has mentioned this species under the name of *Puccinia non ramosa major pyramidata*. The fructifications in this are much less distinct than in the former; and in the following species, which was the only one, beside this, that Micheli knew, they are still less so, whence it is not wonderful that he did not perfectly discover them.

3. *Isaria ramosa bifida.*
The bifid ramose *Isaria*.

This is an extremely minute Fungus, but, when examined with the help of a good magnifier, it is a very beautiful one. It rises with a small single stem, which almost immediately afterwards divides into two, and each of those ramifications afterwards into two more, and so on, till the whole forms a little bush of branches all dichotomously divided. The whole plant is scarce a quarter of an inch in height, and its branches, as if too weak to bear their own weight, often droop and bend: a multitude of the
plants

plants generally grow together, and in that case they resemble a hoar frost, upon the substance they grow on. When examined by the microscope, the surface appears granulated; and, when cut, the branches are found, like those of the others, to be made up of filaments affixed to an axis, and terminated by little globular bodies. We have this species plentiful in January on old sticks in Hornsey-wood. Micheli mentions it under the name of *Puccinia ramosa, bifurcata, minima*.

The other species of *Ustula* will easily be distinguished by their names: they are, 1. The simple, scarlet *Ustula*. 2. The simple, snow-white *Ustula*. 3. The ramose, white, larger *Ustula*. 4. The brown, ramose *Ustula*. 5. The very small, black, ramose *Ustula*.

F U N G I.

Class the Third. Genus the Fourteenth.

PHYSARUM.

PHYSARUM is a genus of Fungi, consisting of vesicles or hollow bodies resembling inflated bladders of a roundish or oval figure, and sometimes sessile, sometimes affixed to pedicles, in which hollow bodies are contained the parts of fructification. The *Physara* produce distinct and separate male and female flowers. The male flowers are single anthers, adhering to short filaments, and growing on the internal surface of the capsule. The female flowers are seeds very minute and round, affixed to placenta, formed of multitudes of fibres, and often surrounded with a gelatinous matter. The capsules are always closed in all parts, and, when the seeds are to be discharged, they burst irregularly: they contain only a single cavity, and are formed of a single membrane, and that usually but a very thin one. In some the placenta is small, and lies loose in the cavity; in others it is larger, and fills it almost entirely up with the appearance of a reticulated substance. Micheli divides the species of *Physara* into three genera, under the names of *Mucor*, *Lycogala*, and *Mucilago*; but the characters are in general the same in all, and the distinctions principally owing to the different state of the plants.

1. *Physarum capitulo rotundo, pediculo capillari.*

The round-headed Physarum, with a very slender pedicle.

This is a very common species, and constitutes one of the most frequent kinds of what we call mouldiness. It consists of a fine capillary pedicle, of a greyish colour, and perfectly pellucid; on the summit of which stands the capsule or head, which is round, colourless, and pellucid at first, but after a little time greenish, and more opaque, and in fine black. This bursts irregularly when quite mature, and exhibits the appearance of a multitude of seeds mixed with a great number of filaments: but it opened with the point of lancet under the double microscope, before it is quite so mature. The seeds are seen to be affixed to a placenta, which afterwards separates into these filaments, and on the insides of the capsule are also seen evident globules of farina. This is very common on animal and vegetable substances, kept damp, and decaying. Hook has figured it much enlarged in his *Micrographia*; Malpighi calls it, *Mucedo capitulo diaphano, deinde viridi et nigro*; and Micheli, *Mucor vulgaris capitulo lucido per maturitatem nigro, pediculo griseo*.

2. *Physarum capitulo ovato, pediculo brevi.*

The oval-headed, short-stalked Physarum.

This is a very pretty species, though extremely small. It rises from the substance it grows on, with a very short capillary pedicle; on the summit of which stands a head or capsule of an oblong oval figure. The whole plant is snow-white in colour; it is not more than a quarter of an inch in height, and the capsule makes two thirds of that measure. When mature, it opens irregularly, and is found to contain a placenta of its own figure, almost entirely filling it up, and very thickly spread over

over with seeds. The antheræ are easily seen on the inner surface, with a good microscope.

This species grows on rotten wood, and is very common with us. Micheli calls it, *Mucilago minima clavæ effigie lactei coloris pediculo donata*.

3. *Phyfarum sessile subrotundum*.

The roundish Phyfarum, without a pedicle.

This species arises from a broad base, and extends itself gradually in a regular manner, in form of a globular, or nearly globular body; when full grown, it is of the size of a small pea; and, several plants of it usually growing together, they often resemble a flat cake of a fungous matter, with a botryoid surface; in this case, however, where separated, each is found distinct, and inclosed in it's own membrane, tho' injured, in it's figure, by the pressure of the others. The colour of this species is grey; it's substance soft and tender, and, if opened, it is found to contain a placenta of a reticulated texture, filling up every part of it; this is formed of interwoven fibres, and contains a great number of seeds in it's interstices; but the whole is surrounded, and it's spaces all filled with a glutinous matter, which runs out in drops, on wounding it, and carries the seeds away with it. This species is common with us on the moist stumps of trees. Micheli calls it, *Lycogala griseum majus*.

The other species of *Phyfarum* will easily be distinguished by their names: they are, 1. The small, white, round-headed, long-stalked *Phyfarum*. 2. The little, white-tufted *Phyfarum*, without any pedicle. 3. The cream-coloured, sessile *Phyfarum*. 4. The copper-coloured, sessile, pisiform *Phyfarum*. 5. The scarlet *Phyfarum*, of the size of a millet-seed. 6. The small, sessile, kidney-shaped, yellow *Phyfarum*. 7. The red, hemispheric, pediculated *Phyfarum*. 8. The flat-headed *Phyfarum*. 9. The white, crustaceous, large, and irregularly shaped *Phyfarum*. 10. The grey, small, globular, pediculated *Phyfarum*. 11. The white, crustaceous, sessile *Phyfarum*. 12. The greenish, crustaceous, sessile *Phyfarum*; and 13. The yellowish, crustaceous, sessile *Phyfarum*. Most of these latter species have been described by Dillenius and others, under the improper name of *Byssi*.

F U N G I.

Class the Third. Genus the Fourteenth.

MONILIA.

MONILIA is a genus of Fungi, consisting of a pedicle supporting a number of naked seeds, arranged together in series like the beads of a necklace.

The *Monilia* all produce distinct male and female flowers. The male flowers are antheræ, placed on short stamina, on the summit of the pedicle, or near the summit, surrounding it in form of a fine powder. The female flowers we are able to distinguish nothing of, except the seeds, which are arranged together in series, by means of a glutinous matter, and stand sometimes close to one another, sometimes more distinct. In some species these chains of seeds are laid along both sides of the summit of the stalks; in others they are wound round in clusters, and form a kind of tuberous knobs, which terminate it; in others they rise at distances from the very summit of the pedicle, in form of fingers; and, finally, in others they rise more numerous in this form, and join near their bases, so as to form a kind of globule, with the extremities of several of the chains of seeds hanging down from them. These clusters of the series of seeds are what Micheli took for placentæ; he has also divided this genus into two, under the names of *Boutyis* and *Aspergillus*; but the differences, this division are founded upon, are rather specific than generical; we have therefore arranged them all together under one genus.

1. *Monilia capitata simplex.**The simple capitated Monilia.*

This is one of the smallest of these small plants, but by the help of a microscope it appears very beautiful. It rises with a single capillary stem, of the height of about a tenth of an inch, at the top of which are first seen a multitude of minute antheræ, in form of a fine powder, with the rudiments of the future series of seeds very small among them; after a very little time these antheræ disappear, and the series of seeds begin to grow up in their places. These stand so close, that they soon conjoin at their bases, and form, in the whole, the appearance of a globular head, with the extremities of several series or chains of seeds hanging from it. The whole plant is of a whitish colour.

It is frequent on old wood in damp cellars, and other the like places; the seeds, when separated, as they may easily be, by shaking the substance on which the plant grows, are found to be of an oval figure. Micheli mentions this under the name of *Aspergillus capitatus, omnium minimus, feminibus ovatis.*

2. *Monilia divaricata caule crassiore.**The divaricated Monilia, with a thicker stalk.*

This is not at it's full growth more than a quarter of an inch in height, and it's top spreads to two thirds of that measure in diameter. It grows erect with a single stem, somewhat thicker than that of the former; near the top this divides into five or six ramifications, on the summits of which are first seen the antheræ, in form of a fine grey powder, with the rudiments of the series of seeds in little protuberances, down both sides of the stalks: soon after the antheræ disappear, these series or chains of seeds grow larger, and, in fine, they cover all the extremities of the ramifications; they are roundish, very large in proportion to the size of the plant, and of a greyish colour, as is also the whole plant.

This species is common on dead sticks, in our woods, in October and November. Micheli calls it, *Botrytis cornata, grisea, caule simplici crassiore, feminibus rotundis.*

3. *Monilia ramosa extremitatibus globosis.**The ramose Monilia, with round extremities.*

This is also a very little plant, rarely exceeding a quarter of an inch in height, and coming under the common name of Mouldiness, as well as many others of this class. It rises with a single capillary stem of a greyish colour, which toward the top divaricates into several branches, and these again subdivide into others. At the extremities of these subdivisions stand at first antheræ, in form of a fine white powder; but afterwards chains of seeds are produced there of the same grey colour, with the rest of the plant, and, which rolling themselves round, only the extremities of the ramifications give them that globular figure visible to the naked eye, though the particles it is composed of are not distinguishable but by a very good microscope.

This species is frequent with us, on decaying, vegetable substances.

The other species of *Monilia* will easily be distinguished by their names: they are, 1. The small, simple, white *Monilia*. 2. The blue-headed, simple *Monilia*. 3. The round-headed, gold-coloured *Monilia*. 4. The black-headed, ramose *Monilia*. 5. The small, capitate *Monilia*, with yellow heads. 6. The snow-white capitate *Monilia*. 7. The black, capitate *Monilia*. 8. The branched, white capitate *Monilia*.

F U N G I.

*Class the Fourth.**Those which grow under the surface of the earth.**Of this Class there is but one Genus.*

TUBER.

TUBER is a genus of Fungus, consisting of a roundish or irregularly tuberous body, rising into a number of pointed prominences on its surface, and consisting of a soft fungous matter, full of winding cells.

The tubera produce distinct male and female flowers, in the same membranous capsules.

These capsules are of an oval figure, and are lodged in the body of the plant; on their inner surface there stand extremely minute antheræ, in form of powder, which seem to adhere immediately to the membrane, without any pedicles. These are the male flowers: of the female we only see the seeds, which are placed in an uncertain number, from two to six, in the cavity of the same capsule.

1. *Tuber prominentiis majusculis elevatis.**The Truffle, with large, high prominences.*

This is the Truffle most frequent at the table, and the best tasted of all the kinds. It is of an irregularly tuberous figure, sometimes round, sometimes oval, and sometimes oblong; at times also it grows sinuous, and much more irregular. Its bark is variously raised into large and high prominences, terminating in a kind of points, and is of a dusky, brownish colour, often looking as if burnt. When cut, the pulpy substance is of a dusky colour, and very full of winding cells; it is of a very agreeable flavour, and of a less spongy structure than the pulp of the common mushroom. The capsules in this species are very large, and of an oblong, oval figure; the number of seeds in each is various, but it rarely exceeds three, often there is only one. This grows to a very considerable size, where the soil suits it; the bigness of a man's fist is not uncommon with it. This species is a native of Italy, and does not succeed so well with us, as the next, which is natural to our soil. This is the species described by the botanical writers under the name of *Tubera terræ edulia*. The other species is not much known, as distinct from this, though it truly is so.

2. *Tuber prominentiis minoribus depressis.**The Truffle, with smaller, and lower prominences.*

This species grows to the size of a moderately large apple sometimes, but the bigness of a pigeon's egg, or a little more, is its more usual standard: it is of an irregularly roundish form, and of a dusky chestnut colour on the surface. Its bark is raised into prominences, but they are lower, as well as smaller, than those of the former, and terminate in more obtuse points. The pulp is of a paler colour, and the cellular windings less frequent. This species has a very agreeable flavour, though not so high as the Italian kind. Its capsules are also much smaller, and of a roundish figure: we have this in several parts of England native. I have met with it in Leicestershire pretty abundantly, where the hogs were the only creatures that had found out such a delicacy, till I informed the neighbourhood of it. The first English Truffles we had an account of, were those discovered, at Rushton in Northamptonshire, by Dr Hatton; but they were of the Italian kind, and had been brought over with the earth about the roots of some trees, many years before planted there, and had continued to propagate themselves from that time.

3. *Tuber purpurascens superficiei granulata.*
The purplish Truffle, with a granulated rind.

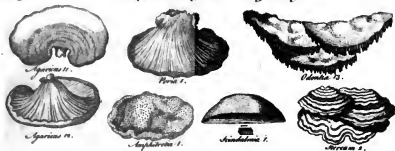
This is the smallest of all the Truffle kind; its general size is that of a nutmeg, sometimes it grows to the bigness of a walnut, but it very rarely exceeds that standard. Its bark is raised into prominences, in the manner of the rest, but they are so small, that they rather deserve the name only of granules; they are roundish and obtuse at the end; the colour on the surface is a dusky brown, the pulp is of a pale purplish colour, redder near the surface than toward the center. The smell is like that of the Truffle, but faint; the taste subastringent, and very disagreeable, with a sweetness at the going off like that of *Terra Japonica*. The capsules in this species are very large, and they usually have four, five, or six seeds in each. These are natives of England, but they are not common with us. Merret, in Ray's Synopsis, speaks of purple Truffles of the bigness of hazel nuts, which he met with in Hampton-Court park; they must have been of this kind. I have met with these in Yorkshire, and in some parts of Wiltshire.

Some authors have recommended a cataplasm of Truffles, as a sovereign remedy in quinsies. Cardan tells us of people almost miraculously cured by it. At present we know no use of it in medicine, but it is a favourite ingredient in our sauces.



THE

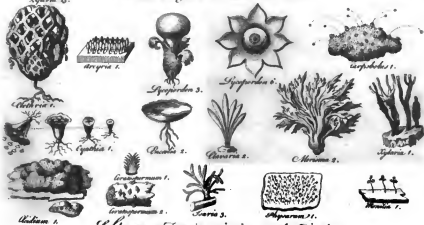




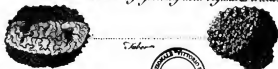
Erect Fungi Consisting of Pedicels Crowned with Heads



Erect Fungi which have no Heads



Subterranean Fungi growing in no regular Direction.



T H E
H I S T O R Y
O F
P L A N T S.

P A R T I.
B O O K III.

M O S S E S.

IN the generality of plants the parts of fructification are distinct and obvious: in such, therefore, nothing farther is necessary to the distinguishing them into classes and genera, than an observation of those parts. In the Mosses it is much otherwise; their fructification, notwithstanding all the improvements that have been made in botany in the late ages, is yet but little understood. The several parts that serve to it are not easily discernible, nor is the use of those which we can discover yet ascertained. Linnaeus has attempted to arrange them according to these, indeed, in his usual method, but himself confesses, that he is not certain whether what he calls the male parts of the fructification are not the female, and, what he calls the female, the male; and we are to add to this, that almost all the parts of fructification, upon which the distinctions of his method are founded, are wanting in these plants.

Where characters of one kind are deficient to the great end of all characters, distinction, we must have recourse to those of another. We could wish to have been able to distinguish the genera of the Mosses by their fructification alone; but, as there are not characters enough, or, at least, enough are not yet discovered of that kind, we must take in others, from the general habit of the plants.

The Mosses, a very numerous tribe of plants, may be thus divided into Seven Classes, the distinctions of which will be obvious, from the general form of the species; and, under these, the genera may be distinguished by what is obvious of the fructification.

The Seven Classes.

Mosses; *Class the First.* Such as consist of tender, flexile filaments.

Mosses; *Class the Second.* Such as consist of a mere foliaceous, or gelatinous matter.

Mosses; *Class the Third.* Such as consist of firm and rigid stalks.

Mosses; *Class the Fourth.* Such as consist of a dry, crustaceous matter.

Mosses; *Class the Fifth.* Such as produce beads with opercula to them.

Mosses; *Class the Sixth.* Such as produce capsules without these opercula.

Mosses; *Class the Seventh.* Such as consist of a foliaceous matter, with pedicles arising from it.

U

M O S S E S.

M O S S E S.

*Class the First.**Such as consist only of tender, flexile filaments.**Genus the First.*

B Y S S U S.

BYSSUS is a genus of Mosses, consisting of plain, simple, capillary fibres. No part of fructification has yet been distinguished in this Moss. It's filaments are uniform, and are often so fine as to be scarce discernible singly, though, in the cluster, they make a kind of fine down.

There has been a long dispute among the botanists, whether the Byssus were properly a Moss or a Fungus. Linnæus is of the latter opinion, most of the other botanists of the former. Dillenius thinks it is of a middle nature between both. Authors have been used to include two very different things under the name of Byssus; the one, the filamentose bodies we include under this name; the other, the dusty matter found on petrified vegetables. Dillenius has described many of these with the others, and Linnæus, who takes in the aspergillus and botrytes of Micheli into his genus of the Byssus, does the same. This, however, is confounding things; and from this, probably, arose the difficulty of ascertaining to what class of plants the Byssus belonged. The filamentose bodies, called by authors Byssi, are truly Mosses, of the nature of the conserve, and other filamentose plants of this class; but the pulverulent kinds, or such as consist of globules, whether with or without pedicles, are all true and proper fungi, and have been described by us as such in their proper place. One would wonder what should induce botanists of such eminence as these to arrange things so very different under the same genus. Dillenius, indeed, rejects the botrytes and aspergilli of Micheli from among the Byssi, though he retains some others there which evidently belong to the same family. His observation, however, that there would be no end of describing them, because they are of different forms, according to the nature of the petrifying matter they arise from, has but little of the botanist, or of the philosopher, in it.

The great distinction between the Byssi and conserve is, that the former do not grow in the water, as the latter all do, and that they consist of finer, shorter, and more tender filaments. The Byssus, upon the whole, is a genus of plants that carries the least appearance of a vegetable nature in it of any known one. Dillenius, the most accurate of all writers on the Mosses, has described fifteen species of Byssus, properly so called. His whole number of plants under this name is twenty, but the first five of these are of the number of the fungus's, of the genus of the aspergilli. We have met with two other species of true Byssi, beside those described by Dillenius, which makes the whole number of Byssi known at this time seventeen.

We shall describe three of the more singular species of these at large; after which, the names will be sufficient to distinguish the rest.

1. *Byssus simplex tenuis, areolaris.**The fine, simple, areolar Byssus.*

This elegant little Moss grows in little clusters, or areolæ, usually of a circular figure. These seldom exceed a sixth of an inch in diameter, but there usually grow a considerable number of them near one another, so that it is easily distinguished at a distance. These clusters are composed of multitudes of extremely fine filaments, perfectly simple and uniform in their structure, scarce a twentieth part of an inch in length, but all perfectly erect, and of the same thickness from the base to the point. These filaments are of a pale-amethystine colour, or of a mixture of white and purple.

After the plant has passed a certain time in this form, the filaments all fall down, and, intangling with one another, they form a kind of membrane, covering the little spot upon which it first stood erect, with a thin crust. This becomes, in a little time,
of

of a deeper purple, and, in fine, of a violet colour, and is even blackish, before it drops off.

It grows on the barks of trees, and, sometimes, on the stalks of the larger mosses. It appears in it's perfect or filamentose state in November and December; after which, it remains till the end of February in it's second form. Dillenius has described this under the name of *Byssus lanuginosa, violacea, lignis adnascens*, both in his History of Mosses, and in his edition of Ray's Synopsis of the British Plants. Micheli has described it twice, under two different names; first, under that of *Byssus purpurea, elegantissima, arborum caudicibus adnascens brevissimis ac tenuissimis filamentis*; and again, under that of *Byssus minima, cærulea, non ramosa, musco innascens*.

I have observed it both on the stumps of trees and on the damp stalks of the great hypnum in Hornsey-wood, and have found it from the palest purple to the deepest blue on both. It's different appearance also, in it's second state, has misled some into the taking it for a kind of agaric. Doody has described it under the name of *Fungus violaceus, herpetis modo lignis irrepens*; and Mr Ray, under that name, both in his Synopsis and his History.

2. *Byssus summitatibus barbatis.*

The bearded, topped Byssus.

This is a considerably larger and more robust plant than the former. It grows in irregular clusters, an inch or two in breadth, sometimes considerably more, and consists of filaments of the thickness of a human hair, and of near two inches in length. These stand erect, their number rendering them a support to one another. They are of an equal thickness throughout, and of a simple, uniform structure; but, at their tops, they divide each into a great number of very delicate and slender filaments, twenty, thirty, or more, in number to each, which form a little brush, or beard, at the top of every filament, of about an eighth of an inch in length, and nearly as much in breadth. The superficies of the whole cluster is, by this means, rendered beautifully tomentose, or, as it were, downy.

The first appearance this little plant makes is very different from this of it's perfect state. It consists, while young, of a number of strait, short, uniform fibres, arranged so closely and uniformly together, that their surface resembles the nap of a piece of velvet. The plant is, at this time, of a pale orange colour. When full grown, it is of a deep orange colour, with more red in it, and is flexible and tough, and the several filaments have sometimes a kind of annular marks, in two or three places, which seem to denote three or four different periods of growth. It has no remarkable smell, but a subsstringent taste.

It grows on the rotten stumps of trees, and sometimes on old boards. I have met with it very perfect and fine in January, in the woods about Harrow. Micheli seems to have meant this species by the name of *Byssus major, speluncæ et cellis vinariis innascens, latissima, primum alba, dein aurea, postea fulva, filamentis crassioribus et longioribus fissilibus*, in his Nova Genera Plantarum: but, if so, he was not acquainted with it in it's most perfect state. Some have supposed it to be the *Fungus Virginianus, barbatus, foetidus*, Banisteri of Plukenet; but the want of smell alone is enough to distinguish it from that plant, which seems rather to be the fungus *barbatus, quercinus, teterimi odoris* of Breynius, Eph. Germ. Dec. 1. Mr Doody evidently meant it, by the inartificial name of *Pseudospongia fungoides, fulva, lignis adnascens*, in the Appendix to the second edition of Ray's Synopsis of English Plants; and Dillenius, in the third edition of that work, and since, in his Historia Muscorum, has described it under the name of *Byssus arborea, barbata, fulvi coloris*.

3. *Byssus ramosa extremitatibus capillaceis.*

The branched Byssus, with capillaceous extremities.

This is by much the most elegant of all the species of this genus. There arise from the same base six, eight, or ten stalks, which are of a flexible and somewhat tough texture, and of a whitish yellowish, or dusky colour. They are somewhat flattish in form, and of the composite kind, dividing, as they grow in length, into a multitude of other small branches, and these all send out shorter and smaller shoots on each side, at small distances. The whole plant grows to three or four inches in length, in the larger

larger specimens; but, in many, it does not exceed half an inch. It always spreads out as much in breadth, or more, than it does in length, and the extremities of all the branches and shoots terminate in a sort of broad and delicate filamentose expansions: in some of these the filaments are perfectly distinct, and wonderfully fine; in others they coalesce, and form a thin and seemingly membranous substance; but these latter I have often observed, after a time, to open into the state of the former, the fibres separating themselves, as they grow drier. The branches sometimes rise naked from the matter they grow to; sometimes they have a kind of base of the same substance with their own, out of which they arise. It's branches do not stand erect, as the filaments of the other Byssi in general do, but extend themselves upon the substance they grow on, adhering every-where very firmly to it.

It grows sometimes on old stumps of trees, oftener on rotten wood in cellars, and sometimes, on the decayed leaves of plants and trees, and a great variety of other substances. When it has sufficient moisture, it is usually of a pure snow-white colour; where it has less, it is yellowish, or livid, and smaller. It is principally found in winter. I have met with very fine specimens of it on decayed oak-leaves, in Cane-wood, near Highgate, in December. Dillenius has described and figured it, both in the third edition of Ray's Synopsis, and in his own History of Mosses, under the name of *Byssus tenerrime villosa* et *elegantissime ramulosa*.

Of these three singular species of Byssi, the two latter have scarce any others like them, the generality of the others being composed of simple, straight filaments, and differing principally in their length and colour. They are, 1. A short, green kind. 2. A complicated, purple kind, found on the bay-tree. 3. A flaky, snow-white one, found in cellars. 4. A short, yellowish kind, with a membranaceous base. 5. The black, silky *Byssus* of Micheli. 6. A yellowish kind, looking like coarse cloth. 7. A fine green one, lying on the ground, and resembling velvet. 8. A yellow, globular kind, growing on boards. 9. An orange-coloured, hair-like kind. 10. A black hair-like kind. 11. A short, fetaceous, white kind; and, 12. A tough, complex kind, of a dusky, blackish-green colour, found in great plenty on our wine-casks. To these, which are all the kinds of genuine *Byssus* described by authors, we are to add the two new species of our own. The first of these is a small grey one, with round branches, more divaricated than any of these kinds: the other, a bearded one, like the second species described here, but shorter, thicker, and divided into fewer filaments at the extremities: both these I found on Mendip-hills, growing near the bottom of the stumps of old trees.

Our wine-coopers have a custom of using the twelfth species to stop the bleeding of fresh wounds, which purpose it answers very well: excepting this, we do not find that the Byssi have been put to any use in medicine.

M O S S E S.

Class the First Genus the Second.

C O N F E R V A.

CONFERVA is a genus of Mosses, consisting of oblong, capillary filaments, not uniform and equal throughout their whole length, but divided into joints of a cylindric or globular figure.

The *Confervæ* all of them grow in water; we have nothing whose place of growth is out of the water, that is at all like them. Their filaments are sometimes simple, sometimes branched, and are often extended to a great length; but no part of fructification has ever yet been discovered in any of them.

It has been a common error of botanical writers to confound the cylindric and tubular *ulvæ* of the slenderer kinds with the *Confervæ*, but the distinction is obvious: length and slenderness are not the generical characters of the *Conferva*, but it's geniculated or nodose structure; every plant which wants this character is to be removed from the class of *Confervæ*, and consequently all those plants, called by Dillenius, Ray, and others, *Confervæ simplices* et *equabillè filo protensæ*, are to be excluded this class; they will be found among the cylindric *ulvæ*.

Boeckone delivers it as his opinão; that the Conserve have in reality no fructification at all: that they do not arise from seeds as other plants, but are formed of an unctuous matter, separated from the water by mere juxtaposition of parts. Dillenius favours the same opinion, and argues, that, as they are plants of a lower class than others, and approach more than any to the nature of fossils, they may probably be formed as they are. There needs no farther answer to so unwarrantable a supposition as this, than to observe, that it's original author Boeckone extends it to the Fungi as well as the Conserve. We have already discovered flowers and seeds in these last, and may probably, at some future time, in the former.

Dillenius, in his History of the Mosses, has described no less than forty-eight species of Conserve; one half of that number, however, is struck off at once, by observing that the first twenty-four are of that kind called Simplicis et oon geniculatæ, and therefore are properly ulm.

As to the remaining half, after descriptions at large of three of the more singular species, a jointed simple one, a ramose jointed one, and a globular branched one, it will be sufficient to distinguish the rest of them by their names.

1. *Conservea geniculata simplex.*
Simple, geniculated Conserve.

This is a very singular plant, and is easily distinguishable at sight. It consists only of a single filament of a cylindric figure, and of the thickness of a large horse-hair of an equal bigness throughout the whole length, but divided by annular marks into a multitude of short joints, of the figure of segments of cylinders. It has no root, nor does it adhere to any thing in it's usual manner of growth, but floats loose in the water usually, at a middle depth, between the surface and the bottom. It's colour is a faint yellow, with an admixture of green, while in the water, but, when dried, it becomes whitish. Several of the filaments are usually found together, variously entangled, and making loose knots; if carefully explicated, however, they are found to be of a surprising length: I have measured some of five feet and a half, and these not entire neither; they are tender, and easily broken. It grows not only in salt but in fresh water. I have met with it abundantly in the ditches below Greenwich; and in the river Nen below Peterborough there is no angling without frequently taking it out; it is usually thicker, and somewhat stronger, in salt water, but in fresh rivets it grows to a surprising length: in the river just mentioned, when the water is clear, it is common to see complicated congeries of it of half a yard in diameter, from which single filaments of a vast length may be explicated, while the whole is in the water; but, if taken out, it collapses, and the separate filaments cannot be pulled out to any great length. Scarce any of the botanical writers have missed this obvious plant.

Imperatus calls it, *Linum aquaticum*; and Chabræus, *Fucus capillaris dictus*. Ray calls it, *Filum marinum Anglicum*, five *Conservea palustris*; and Tournefort, in his *Elements*, *Alga subulosa capillacea folio*. Micheli calls it, *Corallina marina, fetacea, nodosa, viridis*; and Dillenius in his *History*, *Conservea filamentis longis, geniculatis, simplicibus*. It is obvious, from the different generical names under which we meet with this in the greatest authors, how much a regular distribution of these plants into genera has been wanted.

2. *Conservea geniculata, ramosa, plumea.*
The branched and feathered geniculated Conserve.

This is a Conserve of the smaller kind, but it is an extremely elegant one. It grows to two, sometimes to three inches in length, and is usually affixed to some small pebble, or other the like substance, at it's base. Four, five, or more stalks usually rise from the same base, and, while in the water, they spread themselves so as to make a kind of roundish tuft of a very pretty appearance. Every stalk is a geniculated filament of a cylindric figure toward the base, but growing smaller near the top; almost immediately from the root, it sends out lateral branches, which grow to an inch or two in length, and these, as well as the main stalk, which toward the top is scarce distinguishable from them, are terminated by clusters of small and elegant filaments, twenty or more in each cluster, all of the same colour with the main branch, and all geniculated in the same manner. From the sides of the main stalk, and of the

branches also all the way up, there grow little tufts of the same filaments, about a sixth of an inch long, and perfectly like those which terminate the stalks; so that the whole plant, seen in the water, looks like a tuft of an extremely fine filamentous matter, the branches being all hid by these fine pencils. The colour of the whole plant is a deep but not unpleasant green; its surface, when dry, looks glossy, and is less tender than many of the other Conserve: it grows only in fresh waters. The trout-rivers near Rickmansworth afford a great deal of it. I have also met with it plentifully in Wiltshire. Micheli found it in some rivers in Italy; and Dillenius received his specimen of it from the late Mr Becon, who found it in Munnaw river in Herefordshire.

Many of the botanical writers have described it. Plukenet calls it, *Corallina geniculata, mollis, Internodiis brevioribus*; and Micheli, *Corallina fluviatilis, nodosa, capillacea, viridis, minima, ferici modo lucens*. Dillenius describes it under the name of *Conserva fluviatilis, sericea, tenuis*, but imperfectly, having never seen it growing, as he confesses; but having formed his description on a dried specimen, which could convey but a very imperfect idea of the plant. Barrelier has an elegant figure of a plant, which he calls *Corallina cristata minima*, which in all respects agrees with this; but the author tells us, that it is white, or pale red, or purplish in colour: ours is always green, and does not lose that colour, even in drying.

3. *Conserva nodosa, ramosa, aqualis.* *The branched, even, knotty Conserva.*

This singular and elegant Conserva rises usually single from its base, where it is affixed to some pebble, or other solid body, at the bottom of the water. Its stalk begins almost immediately from the base, however, to divide itself into a number of branches, and these, as they ascend, ramify and branch themselves out still farther, so that it forms, in the whole, an extremely divaricated plant, of about three inches high sometimes, but rarely, more. If it grow in clear water, where there are no other plants, it spreads out in a very beautiful manner a single stalk of it, not thicker than a small twine, branching into an extent of three inches every way in diameter, every part of which is well covered with the extremities of the filaments: if it happen to grow where there are other water plants, it usually entangles itself about them, and loses much of its beauty, while in the water. It is singular in this species, that the branches continue equal in thickness, till very near their extremities. They are of a very beautiful structure, seeming composed of a multitude of globular bodies, all of the same size, and arranged as closely and evenly in series as possible. Its colour is a fine bluish purple: it is tender, and easily destroyed, and is of a glossy surface, and somewhat gelatinous to the touch.

It is an inhabitant of the fresh waters, and principally of the cold clear ones which form the lakes on our mountains. I met with it two or three times in Yorkshire; and it is also found in Wales, but we do not find that it has been met with any where out of the British dominions, though so very elegant a species, that, if it occurred in other places, it is scarce to be suspected that it would be overlooked. Dillenius describes it under the name of *Conserva Alpina, lubrica, filamentis nodosis cæruleis*.

Of the other species of Conserva, some are of the geniculated, some of the nodose kind; they are some of them found in our fresh waters, but the largest part of them are inhabitants of the sea. Of the first kind or geniculated Conserve there are, 1. A green kind, branched, but with short ramifications. 2. A kind, with remarkably long joints. 3. One with branched extremities, called the river Beard. 4. A branched, marine kind, known by the name of the Sea-beard. 5. A more diffused one, called the Spreading Sea-beard. 6. A very ramose, fresh-water one, growing in round tufts. 7. A fine-branched, or woolly sea-kind. 8. A silky, trichoid kind. 9. The palmed sea-kind. 10. The large, gelatinous sea-kind. 11. The fine-branched, gelatinous sea-kind. 12. A very-much branched, small sea-kind. 13. The hollow, Sea-Conserva.

Of the nodose kinds there are, 1. A lubricous, pearly, Sea-Conserva. 2. A slippery, coralloid Sea-Conserva. 3. The large frog-spawn Conserva. 4. The smaller frog-spawn Conserva. 5. The tender, green, frog-spawn Conserva. 6. The black, lubricous Conserva. 7. The horse-tail, river Conserva. 8. The sea horse-tail Conserva.

The

The ancients recommend the *Conferve*, in general, as vulneraries, externally applied; and Pliny tells us some romantic stories of the use of them in cases of fractured bones. At present we do not bring them into use at all; and it is most probable, that, in the times of the authors who mention them as vulneraries, they were used by the surgical people rather as bandages, than from an opinion of any peculiar virtue they possessed against wounds or fractures; several of the species, when lightly twisted together, make a very soft, and sufficiently strong, substance for such purposes as we suppose them to have been used for.

M O S S E S.

Class the Second.

Such as consist of a more foliaceous or gelatinous matter.

Genus the First.

PHYLLONA.

PHYLLONA is a genus of Mosses, consisting only of a thin membranaceous matter, resembling in some measure a leaf; of an uniform and even structure, pellucid and moderately firm. No part of fructification has yet been discovered in any species of this genus.

The botanical writers, in general, have confounded three different genera of Mosses, of which the *Phyllona* is one, under the same common name; some of them have called them *Ulva*, others *tremelle*. The first of these genera consists of a simple, foliaceous matter; the second, of tubular, cylindric bodies, formed of the same kind of matter; and the third, of a merely gelatinous substance. We have, to prevent future confusion, separated the first and last of these under new generic names; the second we have retained the term *ulva* as a generic name for, to avoid a third new one, in a case where Linnaeus had already appropriated a word to the same idea. The first of these genera takes in the foliaceous *ulva* and *tremelle* of Dillenius, &c. The second, the tubular *tremelle* of these authors, and all the simple or equable *conferve*; and the third, some vegetables all evidently of the same kind, though distinguished by authors under the various names of *Fuci*, *Coralline*, and *Alga*.

There are properly no more than six species of the *Phyllona* known at this time. A description of one of them will be sufficient: the rest will easily be distinguished by their names.

1. *Phyllona umbilicata.*

Umbilicated Phyllona.

This is much more regular in its growth and general form than the others of this species: it grows to a stone or shell, or any other solid matter, at the bottom of the sea, by a small roundish base, scarce a quarter of an inch in diameter in the most elegant specimens, in some much larger. From this base or umbilicus it expands every way, till it has formed a sort of basin or roundish hollow body: The base serves as the umbilicus to this general figure, and is the lowest part of it. The whole consists of a single continuous substance, undulated or irregularly sinuated at the edges, very thin, and resembling, more than any thing else, a very fine parchment. Its colour is a dusky brown, with some tinge of purplish in it; its substance much resembles that of the common oyster-green, but that it is firmer; and its surface is smooth and glossy. It grows to four or five inches in diameter, but is seldom met with perfect, the sand and other bodies washed against it tearing it to pieces.

It is not uncommon about our own shores, particularly those of Kent and Sussex, and, when entire, makes a very beautiful figure.

Most of the botanical writers have described this species; but, as they have taken more notice of its colour, than of its form and texture, they give but very imperfect accounts of it. Lobel calls it, *Lichen marinus rubescens et flavescens*; and John Bauhine and Chabreaus give it under the same name; but the figures, as well as descriptions of these authors, shew that they had only met with small or broken specimens.

Ray

Ray and Morison both describe it under the names of *Fucus lichenis facie marinus*. The Scotch who eat it call it *Slake*. Tabernamontanus seems to mean this species by the *Lactuca marina*, which he figures as the common one; but his description is too short to form any certain judgment from it. Imperatus describes it under the name of *Umbilicus marinus*, and Morison and Ray, under those of *Fucus marinus umbilicatus*, and *Fucus, umbilicus marinus dictus*.

The other five species are, 1. The common oyster-green, or laver. 2. The small *Phyllona* of our fresh water. 3. The oblong, verrucated *Phyllona*. 4. The oblong, smooth *Phyllona*; and 5. The linze, or fasciated *Phyllona*. All these are of the same tender texture with the common oyster-green, and all are inhabitants of the sea, except the second: they usually grow by a small base to stones, and other solid bodies, near the shores.

M O S S E S.

Class the Second. Genus the Second.

U L V A.

ULVA is a genus of Mosses, consisting of a merely foliaceous matter, formed into oblong, cylindric tubes. These tubes are sometimes plain, sometimes wrinkled. They usually grow to a great length, and are of various diameters, but no part of fructification has ever yet been discovered in any of them.

This genus, as it includes what are called the tubular tremellæ, and with them all the smooth conserve of authors, is considerably abundant in the number of it's species. They have all, however, so general an external likeness, that, after giving descriptions of two or three of them, we may very safely leave the rest to be distinguished by their several names,

1. *Ulva longa, tenuis, simplex.*
Long, fine, undivided Ulva.

This plant consists merely of long, cylindric, capillary filaments; there grow several of them from the same base, fifty, a hundred, or more, from whence they extend themselves to six, eight, or ten feet; they are of an equal thickness, or very nearly so, all the way, and are hollow, being composed of a thin tubular membrane, easily broken, of a deep green colour, and of a glossy surface. These filaments are always simple, never so much as a single ramification growing from them; they generally adhere at the base to a stone, sometimes to a piece of board. Their common place of growth is in the clearer running waters, where they follow the course of the stream, extending their filaments to a surprising length.

This plant is described by all the botanical writers, but under various names: the generality have called it *Conserva vulgaris*, and supposed it the conserve of Pliny, which, he says, grows upon stones in the brooks on mountains, and is hair-like, and hollow. There are not wanting authors who deny a hollowness to this and the other conserve, as they call them, of these simple and equable kinds; but it is owing to their imperfect observation of them; either they have not used the proper assistances in the examination, or else they have examined them at an improper time. When out of the water, the sides of the tube are apt to collapse and form a flat, solid body, and at certain periods of growth the cavity also fills up by nature, or at least grows too small to be discernible; but whoever will examine the conserve, with the help of a glass in water, when at their full growth, and in their most perfect state, will find a very manifest cavity in all of them: most he will find mere, thin, membranous tubes. Lobel has figured this species under the name of *Conserva Plinii*; and Gerard, Parkinson, Chabræus, and a great many others, who have given figures of it, have evidently only borrowed this of Lobel's. Aldrovand has indeed given a figure of his own of it, and has copied a description from Pliny: it is pretty clear, that he never saw the plant; so that 'tis easy to guess what information is to be had from him. Micheli has given a new figure of it, and refers it to the *Byss*, whither also we should have referred it, if, as authors, in general, have related, it's filaments were solid, and not

not tubular. Authors describe several conservæ, as they call them, which grow on land, and consist of solid filaments; all these we refer to the Byss: but the tubular ones, which are all of them inhabitants of the water only, are to be referred to this genus, though at present divided by authors; among many others, Tournefort calls this species *Alga fluvialis*, graminea, longissimo folio. Boerhaave, *Muscus aquaticus conservæ dictus*; and Bromelius, *Fucus capillaceo folio*. We meet with it also in the very best authors, who have written largely on these subjects, described many times over, in it's different states, under various names, with conservæ at the head of them: It is only in running waters that it can extend itself, as described here: these are it's proper place of growth, but it is often met with also in flooding waters, and sometimes in foul puddles: in large and clear ponds it diffuses itself every way, and seldom extends to a greater length than ten or twelve inches, in foul and shallow puddles; it often does not grow to more than two or three inches, and stands erect. In both these and many other appearances of the same kind the plant is wholly the same, though it is not under exactly the same form.

2. *Ulvæ ramosa, subrigida, brevis.*
Short, rigid, branched *Ulvæ*.

This is a plant of considerable beauty in it's divisions, and while in the water, with it's ramifications all extended, makes a very pleasing figure. It grows to three or four inches in length, sometimes it is much less, rarely more. It rises from a small flat base, fixed on some pebble, or other solid substance, and from a single stem divaricates into a multitude of parts, each of which sends off a number of lateral branches, all dividing into still smaller, till, at the extremities, they become almost imperceptible. Sometimes only one main stem arises from the base, sometimes two, three, or four, in which case it is less distinct, but extends farther. It's colour is a dusky green; it's larger branches have a cavity in them pretty large, in the smaller it is less perceptible: it is of a finer structure than most of the other *Ulvæ*, and less flexible. It grows in rivulets, brooks, and other running waters, and is frequent enough in many parts of England. Several of the botanical writers have mentioned it, under the name of *Conservæ fluvialis fibrillosa*.

3. *Ulvæ sinuosa simplex.*
Simple, sinuous *Ulvæ*.

This is an extremely singular species, and is so different in it's figure and size, according to it's time of growth, and the water it is in, that it might easily lead people into an opinion of it's being, under these several states, several different plants. It is usually simple, but sometimes it divides into a few ramifications. When full grown, it is of the thickness of a sheep's gut, and of three, four, or five feet in length. It is at this time a mere membranaceous tube; the membrane itself is not thicker than a fine paper, and it's cavity such as will admit a man's finger: the cavity of the smaller species may be better understood by that of this large one, than by any examination of themselves; for they appear to be all alike in this respect, it is continued through the whole plant, and has no valves, or any thing to intercept it. The surface of the tube is full of wrinkles and sinuosities, very deep, and very irregular; the membrane it consists of is very tender, and is at first of a yellowish colour, afterwards greener, and sometimes brownish: while young, it is less sinuous; and, as it grows, if it have plenty of water, and that of a proper degree of saltness, it will run into a multitude of luxuriant figures. It is common in salt water ditches, and about the sea-shore in some places. We have it in great plenty in the ditches about Greenwich and Woolwich, where it grows to a vast length. It is naturally affixed at the base to a stone, or to some other solid body; but it frequently breaks off, and the greatest quantities of it are found floating loose on the surface of the water. It is most frequent in salt waters, and then grows most luxuriant; but it is not wanting in our fresh ones. Mr Brown met with it in Shropshire, and I have seen it in the ponds in Wiltshire, in many places.

It is so singular a plant, that scarce any of the botanical writers have missed it, but they have described it under many different generical names. Tournefort and the Bauhines make it a *fucus*; they call it *Fucus cava*, and *Fucus tubulosus*. Imperatus calls it *Cava*; Ray, *Lactuca marina tubulosa*; Plukenet, *Lichen fluitans tubulosus*; Buxbaum, *Conserva latifolia, flavescens, intus cava*; and Linnæus, *Ulva tubulosa simplex*: our common people call it the Sea Chitterling.

As to the other species of the *Ulva*, it is not easy to ascertain them: nothing is more certain than that, in this genus, the same species, in it's different states, has been described frequently for several different ones. What seem most evidently and indisputably different species, are, 1. of the *conserva* kind, as they are called: there are, 1. The small, byssus-like *Ulva*. 2. The forked *Ulva*. 3. The white, silky *Ulva*. 4. The fennel-like Sea-*Ulva*. 5. The forked, bristly *Ulva*. 6. The ditch, hairy *Ulva*. 7. The cottony *Ulva*. 8. The flocky *Ulva*. 9. The reticulated, fine *Ulva*. 10. The spongy *Ulva*. 11. The short, divaricated *Ulva*. 12. The cancellated *Ulva*. 13. The feathered *Ulva*.

2. Of those called *Tremelæ* by authors there are, 1. The bladder-headed Laver, or *Ulva*, described by Dillenius; and, 2. A short, smooth, and thick kind, consisting of a much tougher membrane than the rest, which I have met with about Bognor Rocks in Suffex.

Let it not appear singular that, in this distribution of the Mosses, we have allowed no such genus as the smooth *Conservæ*, so many species of which are described by authors. There can be no such genus, since a Moss composed of tender and smooth filaments, if those filaments are solid, is a byssus; if they are hollow, it is an *Ulva*. The species described by authors, under the names of *Conservæ simplices*, and *equabiles*, are partly of the one, partly of the other of these genera; the land kinds are, in general, byssi, and their names are given, at the end of our account of that genus; the water ones are *Ulvæ*, and mentioned among the first series here.

M O S S E S.

Class the Second. Genus the Third.

COLLEMA.

COLLEMA is a genus of Mosses, consisting merely of a gelatinous matter, resembling boiled glue, or size.

This is sometimes disposed in form of filaments, sometimes of membranes, sometimes of neither, but perfectly shapeless. No part of fructification has ever yet been distinguished in any of the species of this genus.

Authors who have written on these subjects have been acquainted with many of the species, but, as no generical character has before been established for them, they have arranged them among the *Conservæ*, *Ulvæ*, *Tremelæ*, and *Lichenoides*, though it is evident that they have not the characters of any one of those genera. Where the only obvious character, indeed almost the only character, of a set of plants appears in their texture, it must be allowed us to take the generical character from that. As to the class they belong to, it is evidently that of the tender, foliaceous Mosses, as their whole substance seems no other than a distended matter of the same kind, and, in all of them, dries up to a membranous substance, wholly like what others naturally exhibit. We shall here, according to our custom on the other occasions of this kind, describe four or five of the species at large, after which the others will be easily distinguished by their names.

1. *Collema filamentosum crassius.*

Thick, filamentous Collema.

This is an aquatic species. It extends itself in form of a thick, gelatinous matter, over stones, and other solid bodies, in our clear brooks and rivulets. The masses of it are three, four, or more inches in diameter, and of half an inch frequently in thickness. It is extremely lubricous to the touch, and is so tough as not to be easily broken to pieces. It's colour is a deep dusky purple. It appears, at first sight, a mere mass of

of jelly, but, when more nearly examined, it is found to be composed of a multitude of long, cylindric filaments, of a mucous, or gelatinous substance, interwoven with one another in various directions, and laid so close every-where, as to join, and, together, to form this seemingly rude mass of jelly. Such is the condition of this *Collema*, when in it's recent and fresh state; when dried, it becomes a thin membrane, like parchment, of a fine, deep, violet purple; and the cylindric filaments it is composed of are then very distinctly visible; they are slender, every-where of the same diameter, and perfectly resemble those of the byssi and finer ulvæ.

I have met with it in some of our trout rivers in Buckinghamshire, where it renders the stones so slippery, that, if the necessities of the sport lead people a little way into the water, there is no standing upon them. It is also found in the brooks among the Welch mountains.

Some of the botanical writers have mentioned this. Dillenius makes it a *conserva*, and gives a tolerably perfect description of it, under the name of *Conserva mucosa, confragois rivulis innascens*.

2. *Collema filamentosum tenuius.*

The thinner, filamentose Collema.

This is a species of which the naturalist can preserve no specimen. It is scarce possible to take it up out of the water, without destroying it, and wholly impossible to make it retain any thing of it's form, in drying.

It grows in small and roundish clusters, or globules, at the bottom of standing waters, and consists of a multitude of ramose filaments, of a tender, gelatinous matter, which intersect one another in many places, and every-where cohere so as to form, in the whole, a mass of an uniform, gelatinous structure. It's colour is a dusky green, with an admixture of brown; it's texture so extremely tender, that it falls to pieces on almost the least touch, and, if attempted to be dried with the utmost care, it only leaves a small, thin, and shapeless membrane. It grows to the mud at the bottom of still waters, and often in such quantities, as to cover almost the whole surface of it. It is very frequent about towns where the filth continually washed into the ditches fills them with a light and loose rich mud.

The botanical writers have not missed this, and the appearance of fibres in it's texture has made them range it among the *conserve*. Ray calls it *Conserva gelatinosa, omnium tenerissima et minima, aquarum limo innascens*; and Dillenius has described it, under the same name, in his History of Mosses. It is either peculiar to England, or, to the credit of the English botanists, it is a plant overlooked by those of all other nations.

3. *Collema dichotomum.*

The dichotomous Collema.

This is not only the most beautiful of the whole genus of the *Collema*, but is one of the elegantest of the whole tribe of Mosses. It grows to the length of three or four inches, and it's thickness, in the largest part, is that of a small packthread. It adheres to some pebble, or other solid substance, at the base, and rises with a single stem, which soon divaricates into two, each of those into two more, and each of these subdivisions separate again and again in the same manner, till, at the extremity, there are often fifty, sixty, or more branches. It is, throughout, of an elegantly-jointed structure: the joints are oblong, and somewhat larger at their tops than at their bases, so that it resembles the structure of some of the corallines in appearance. The whole consists of a gelatinous substance, so soft that it is easily destroyed in handling. It's colour is a pale purple, sometimes whitish. It is difficult to take it up entire; but, if dried, it becomes an extremely thin and transparent membrane, adhering very firmly to the paper by it's own glutinous quality.

It is a marine plant, and is not uncommon about our own shores. I have met with it very frequently about the Island of Sheppey, and once on the Bognor Rocks in Sussex.

It has been described by some of the botanical writers under the name of a *Conserva*, and, by others, under that of a *Coralline*. Dillenius calls it *Conserva marina gelatinosa, coralline inslar geniculata, crassior*; and Kempfer, *Musculus marinus, coralline similis, multifidus, folio tenuissimo*.

4. *Collema*

4. *Collema compressum*.
Flatted Collema.

This is a species extremely different from all the former in its configuration. It consists of a number of branches, or ramifications, arising from one common base: these grow in all directions, and usually form, upon the whole, a figure approaching to circular. They are of the same gelatinous and tender substance with the rest of the plants of this species; and, near the base, where they stand close, they cohere and run together so as to form a confused, gelatinous mass, of the breadth of an inch, or more, and nearly of the third of an inch in thickness. From the edges of this, the branches run to half an inch, or thereabout, in length, and are variously divaricated and thick, but flattish. The colour of the whole is green, and its substance that of a stiff jelly. It grows to posts and old boards, under water, in salt ditches. I have met with it in Canvy Island in Essex abundantly. The botanical writers have some of them described this, but under the odd general names of a fucus, a conferva, and a tremella. The late Dr Manningham, who seems to have been the first that discovered it with us, called it *Conserva gelatinosa*, *damæ cornua representans*; and, under that name, it stands in Ray's Synopsis of British Plants. Vaillant calls it *Fucus fontanus*, *pinguis*, *corniculatus*, *viridis*; and Dillenius retains Dr Manningham's name, only that he changes the general term from *Conserva* to *Tremella*.

5. *Collema sinuosa fugax*.
Sinuous, fugacious Collema.

This is the least permanent of all the species of this genus; it decays almost as quickly as the aquatic kinds, when exposed to the air, and is seldom half an hour in the same state. It is a mere gelatinous substance, variously divided into a kind of lobes, of an irregular figure, an inch or two in length, and near as much in breadth, and often above half an inch in thickness: these lie irregularly over one another, and constitute, as it were, one mass of jelly, the surface of which is variously sinuated. The lobes are a sort of very thick membranes, of a tender and soft texture, and shake like a mass of size, or thick jelly, on the slightest touch. Their colour is at first a deep dark green, and afterwards yellowish. When dried, they become thin membranes, transparent, and scarce thicker than leaf-gold. It grows on the surface of the earth, though it is scarce possible to distinguish any roots by which it adheres to it, and is common in rainy seasons, in spring and autumn, in meadows and in garden-walks. It grows very quick in the wet, but, as soon as the rain is over, the sun and wind presently dry it up. If its growth be traced from the earliest visible period, it is found, at first, in small globules, eight, ten, or more in a cluster: these are as big as great pin's-heads, and, by degrees, increase in size, and each furnishes one of the lobes already mentioned, which adhere one to another, some more firmly, others more slightly, and so form the whole plant.

Scarce any of the botanical writers have omitted the mention of this plant; nor have the chemists been less fond of it: the vulgar well know it too, and are apt to believe it somewhat preternatural; our common people suppose that it is the meteor which they know by the name of a falling star, dropped on the ground. The Swedes, Linneus tells us, take it for a fragment of a cloud, tumbled down by some accident. Paracelsus gave it the whimsical name of *Nostoch*, which it has retained with many people since. Micheli establishes it into a genus, and calls it *Linkia*; Mentzel makes it a Lichen, and Vaillant calls it *Muscos fugax*, *membranaceus*, *pinguis*. Ray, in his Synopsis, calls it *Ulva terrestris*, *pinguis*, et *fugax*: Linneus, *Byssus gelatinosa*, *fugax*, *terrestris*, though not very properly according to his own general characters. Dillenius, in his Catalogus Giffensis, calls it a *Lichenoides*, but, in his History of the Mosses, he makes it a *Tremella*.

The other species of Collema are, 1. A fine-branched Sea-Collema. 2. The bushy, larger Sea-Collema. 3. The filici-form Land Collema. 4. The black, tough, Tree-Collema, called by the vulgar *Witches-Butter*: and, 5. The bliddy Collema.

The Collema *sinuosa fugax*, or *Nostoch*, is the only species of this genus that was ever thought of for medicinal purposes. It is recommended by some, as an external remedy for ulcers; and some have given it internally, as an anodyne. The chemists

are

are fond of a notion, that a spirit may be drawn from it fit for the radical solution of gold; but this is about as probable as their other imaginations. Chemically analysed, it is found to contain a great quantity of phlegm, an essential oil, a volatile, urinous spirit and salt, and a small quantity of a fixed alkaline salt. These are principles contained, more or less, in almost all vegetables, but, in general, the Mosses of this kind afford more of them than what are called the more perfect plants; and may be supposed, therefore, to possess many virtues, were they to be examined more at large than has yet been done. The common people in Leicestershire give this internally in fevers, and, as they pretend, with great success; but it is not only in the mouths of the vulgar that the good effects owing merely to the efforts of nature are attributed to medicines.

M O S S E S.

Class the Third.

Such as consist of firm and somewhat rigid stalks.

Genus the First.

U S N E A.

U S N E A is a genus of Mosses, consisting of mere filaments only, but these of a tough and firm texture, and exhibiting on their surfaces some appearance of a fructification, in a kind of scutellæ, or orbicular bodies, growing from several parts of them, sometimes from the sides, sometimes from the extremities. The species of *Usnea* described by authors are no less than sixteen, to which we are to add three very distinct kinds, which have hitherto escaped notice. We shall describe two or three of the more singular *Usneæ* at large, after which the names will be sufficient to distinguish the rest of them.

Micheli has gone so far as to describe the fructification of the plants of this and the succeeding genera particularly. He tells us that these scutellæ are the parts which contain the male flowers, and that the female flowers, and the seeds which succeed them, are dispersed in the manner of a fine powder on other parts of the plants, sometimes on other plants of the same species. Some observations of our own, however, have led us, though we greatly honour Micheli, not to pay quite so much respect to these his discoveries as to establish genera from them, as Linnæus has done: in objects so minute there is infinite difficulty in the way of a perfect explication.

1. *Usnea villosa implicata.*

The tufted, tangled Usnea.

This is the largest and most conspicuous of all the *Usneæ*: it hangs in great tufts from the bodies of old trees, and its extremities have so much the appearance of hairs, that it has obtained the general name of a hairy, or bearded, tree Moss. It grows from a firm base, affixed to the bark of some old tree, and generally rises from it with a single stem. This is about the thickness of a common packthread, and, from its bottom to the extremity almost, sends off a vast number of lateral branches; these send each a number of others off, and these are again the parents of others, which, at last, terminate in long and slender filaments, scarce thicker than horse-hairs: these surrounding the main stalk every way, and all sending their ramifications straight downward, the whole has the appearance of a great tuft of long hair; and the several branches, in their way down, intangling with one another, give it a strangely complicated appearance. These filaments, as well as the main stalks, are somewhat rigid, and very tough: they consist of a soft bark, and a harder internal substance. The whole plant is of a pale ash colour, or grey. At the extremities of the filaments, and sometimes on other parts of the plant, there grow orbicular scutellæ; these are of a sixth of an inch, or thereabout, in diameter, and are so lightly hollowed, that they appear almost flat: they are of a pale grey on the upper side, and brownish below, and have a sort of hair like radii about them.

It grows in thick forests, and is very common in Germany and Poland: with us it is more rare. I have met with it, however, in prodigious abundance in Charlton-forest in Suffex.

The botanical writers, in general, have described this Moss: it was long in use in the shops, under the name of *Usnea*. Gesner and Rudolius describe it under the name of *Muscus arborum*; *Muscus arboreus* is also a name many have called it by. Aldrovand calls it *Anthelos fagi*, and Dillenius, in his *Catalogus Giffensis*, *Conserva arborea cinerea*; but, in his History of the Mosses, he has called it *Usnea*, and, very judiciously, establishes a genus under that name. Micheli calls it *Lichen cinereus, longissimus, barbatus receptaculis florum rufescentibus coronatis*; and Linnaeus, *Lichen ramis filiformibus ramolis pendulis confertis*, in his *Flora Laponica*; but this Michelian genus of Lichen is much too large, and is established on too vague principles.

2. *Usnea divaricata dura.*

Hard, divaricated Usnea.

This singular species of *Usnea* rarely grows to more than five inches in length. It rises single, from a small, flattish base, but it's stem immediately divides into two or three parts, and these, as they extend themselves, divaricate again and again in the same manner; so that, after the first quarter of an inch from the base, it is impossible to say which is the main stalk, or, indeed, that there is any such. It's branches are of a rounded figure, gradually growing smaller as they approach their extremities; they are remarkably hard and rigid, feeling something like an iron wire to the touch: notwithstanding that they branch out so freely, the whole never forms a thick tuft, the divarications fall several ways, and leave the plant very loose and open. The colour of the whole is a greenish grey, where it thrives well; in other places it is brownish, and often does not grow to much more than an inch in length. It grows on old trees, and sometimes on posts, and even on stones. It neither hangs down, as the preceding *Usnea*, nor stands erect, as the following species, but creeps every way upon the substance it grows on, and often adheres firmly to it. At the tops of the divarications there grow scutellæ, of an orbicular figure, and greyish colour, somewhat hollowed, and ornamented with a number of cirri, or short hairs, at their edges. It is a very scarce species, and the scutellæ are yet more rarely found upon it. I have met with it in the forest of Dean in Gloucestershire, but never saw any scutellæ on it there; in Northamptonshire, near Peterborough, I met with it on a rotten gate-post, with four scutellæ on one plant. Many of the late botanical writers have been acquainted with it; Merret, in his *Pinax*, calls it *Muscus caule rigido sili instar chalybei*. Plukenet and Ray also distinguish it by the same name. Buxbaum calls it *Lichen capillaceus setæ equinæ instar rigidus, ex fusco vires*; Celsius, *Lichenoides caule rigido*; and Dillenius, in his *Catalogus Giffensis*, makes it a *Conserva arborea*; but, in his History of the Mosses, he describes it under the name of *Usnea rigida horum vorsum extensa*.

3. *Usnea ramosa crassior.*

Thick-branched Usnea.

This species adheres to the tree on which it grows by a woody tubercle, often of considerable thickness. From this base there rises a single stalk, of the thickness of a packthread; this sends off, on every side, a number of branches, and is itself continued to the very extremity, but lessening in diameter all the way. The whole plant is usually about an inch and half, or, at the utmost, a little more than two inches high, and the main stalk, as well as the several branches it sends off, are furnished with a number of fibrils, like short hairs, all the way up, and both the main stalk, and these branches, terminate in such. The colour of the whole plant is a grey, sometimes with a cast of yellowish in it. At the extremities of it's branches sometimes, though rarely, there grow orbicular scutellæ, like those of the others; they are flat, a little hollowed, and of the breadth of a six-pence, and are ciliated, or hairy, at their edges.

It is a very common species, growing abundantly on almost all our old trees. It stands erect on them, and is sufficiently robust and rigid. It is not very frequently, however, found with it's scutellæ on it. It varies extremely in it's manner of growth, according to the exposure, and quantity of nourishment supplied it; and hence has been described

described half a dozen times over by many of the late botanical writers, under the names of so many species. It has been mentioned under the name of *Muscus arboræus floridus*, by most of the late authors. Caspar Bauhine calls it *Muscus arboræus, cum orbiculis*; John Bauhine, *Muscus peltatus*; Morison, *Muscosungus arborum capillaceus*. Micheli has evidently described it three times, under the names of three different species, in his N^o. 12, N^o. 39, &c.

4. *Usnea compressa*.

Flat-branched *Usnea*.

The *Usnea* of the Arabians.

This is a moderately large and long species. It grows to the trunks and branches of trees by a flat base, of the breadth of a silver penny, or thereabout; from this base there arises usually only one stalk, but sometimes more. The main stalk continues entire for about an inch from the base, after which it begins to divaricate into several branches; these all break again into others, so that, from one main stalk, the branches at the extremity are often forty or fifty. The whole plant is of a whitish colour. It grows to five or six inches in length, and its main stalk, as well as the several ramifications, are not round, but somewhat flattened. The surface is perfectly smooth, and somewhat glossy. The main stalk is seldom thicker than a packthread, and the ramifications terminate in fine and pointed capillaments. The branches do not run straight, as in many of the *Usnea*, but are frequently very crooked, and, at the extremities, have been supposed to have somewhat of a horned figure. It is not a native of England, nor, so far as is known, of Europe; it is very common in the East Indies, where it has a very fragrant and perfumed smell; but this is generally lost, before the plant can be brought over to us. It grows on trees, and sometimes on old wood that has been wrought. The Indians call it *Sabgia*. Camelli has described it to Ray under the name of *Muscus arboræus candidus et odorifer*, in which name it stands in his History. Belonius calls it *Byron*, and tells us it is sold at Constantinople, where it is called *Usneck*, and laughs at those who suppose our *Usnea* the *Usnea* of the Arabians.

The other species of the *Usnea* described by authors are, 1. Micheli's dichotomous kind, with fine points. 2. The dichotomous *Usnea*, with thicker points. 3. The finer and longer *Usnea*, with the weak bark: the cortical part of this is apt to crack annularly, and the segments of it then resemble the beads strung on a necklace. 4. The flat-branched *Usnea*. 5. The bearded, finer *Usnea*. 6. The black, jubated *Usnea*. 7. The hard, woolly, black *Usnea*. 8. The black, tufted *Usnea*. 9. The horse-hair *Usnea*. 10. The small, grey, branched *Usnea*. 11. The orange-coloured, forked *Usnea*. 12. The yellow, rigid *Usnea*. 13. The white, smooth, sweet *Usnea*. The three new species are, 1. A yellow, short, soft, and extremely-branched one. 2. A yellowish, very long, rigid, and stringy one: both these are found in Charlton-forest; and, 3. A brown, divaricated, and very bushy one, found near Mount Sorrel in Leicestershire.

The *Usnea* have the fortune to be more in credit, as medicines, than the Mosses of any other genus; there are no less than three species celebrated by medical writers for their virtues. The *Usnea villosa implicate*, first described, has been greatly celebrated as an astringent, and prescribed in diarrhoeas, dysenteries, and hæmorrhages. Sæchsius recommends its powder extremely as a styptic, and Linnaeus tells us, that the Laplanders use it to their feet, when they are sore with much walking. Many other virtues have also been attributed to it, but this has been through the error of supposing it the same with the *Usnea* of the Arabians, or the species last described here.

Mr Ray recommends the *Usnea ramosa crassior*, boiled in ale, against defluxions of all kinds, and tells us, that it was also used in powder for the chin-cough, and all other inveterate coughs. The *Usnea compressa* is the true *Usnea* of the Arabians, and has long retained its place in the catalogues of the materia medica; but the first species, or, in defect of that, any tree Moss, that came most readily to hand, was used in its place. Camelli assures us, that the genuine Moss is, when fresh, of a very fragrant smell. It is used as a perfume at this time by the Turks, and stands recommended as a cordial by the Arabian writers.

M O S S E S.

Class the Third. Genus the Second.

P L A T Y S M A.

PLATYSMA is a genus of Mosses, consisting of a firm, tough, and flexile matter, formed into ramifications, which are flat and thin, and, in some degree, resemble, in their divisions, the sea fuci.

These Mosses have the same appearance of fructifications with the usneæ; they have roundish scutellæ growing on the edges, or surfaces, of their leaves, in many parts, which evidently serve to the propagation of the species, though the exact manner in which that is performed is not yet discovered.

The later botanical writers have made all these plants species of that enormous genus lichenoides, or, according to Linnæus, lichen, which takes in a yet greater number; but, though it must be allowed that the fructification appears much alike in all these, it is rash to determine that it is really perfectly alike in all, from the little we at present know of it; and it is impracticable to establish general characters on the parts of fructification, in plants in which we are so little informed what those parts truly are. Micheli led Linnæus into this; but not even the reverence due to two such names as these ought to plead against innovation, in a case where the distinction of so many hundred plants as are included under this term lichen is impracticable without it.

1. *Platysma reticulatum marginibus scutelliferis.*

The reticulated Platysma, with the scutellæ on the edges. Oak Lungs.

This is the largest of all the plants of this genus. It grows to the trees on which it is found by a firm, and somewhat thick, woody base; from this there arise sometimes one, sometimes more distinct plants. Each plant is, near the base, a broad and flat substance, of a rough surface, and full of veins and risings. It expands in breadth for half an inch, an inch, or more, and then begins to divaricate, or separate itself into segments. The whole plant is frequently eight or ten inches long, and six or more in diameter. The several segments, where they are separate, are usually about half an inch broad, but they frequently coalesce, and form a continued substance, of an inch or two in breadth; and, what is more singular, those ramifications, which go off first from the main plant, often unite themselves to it again at their ends; a thing not uncommon in the vegetation of the submarine plants, but which we do not meet with in any other, except this and some other of the Mosses of this class. The several divarications are variously divided into segments, and usually terminate in a forked end. The whole plant is of the thickness of a strong parchment, and is almost as tough as leather. It's colour is a pale brownish yellow. The surface of the whole is extremely irregular. There are prominent veins running all over it in an irregularly reticulated form; between these there are a multitude of depressions, which form as many protuberances on the under side. These prominent parts are paler than the rest of the under side, which is sometimes only a little darker than the upper, and sometimes blackish, and is somewhat downy, and sends out, at certain distances, a number of cirri, by which it fixes itself down to the tree, or to the Mosses on it's surface. On the edges of the segments, and in the several parts near them, grow a great number of scutellæ; they are not very large, but very hard, solid, of a reddish brown on the upper side, and paler underneath. On the edges of the segments also, and in some places along the prominent ribs of the plant, near the extremities, there appear rows of little protuberances, of a grey colour, and formed of congeries of a dusty matter. It is highly probable that these have some share in the fructification, but what that is, or whether they belong to the male or female parts, is not easy to be determined; Micheli makes them the female parts, but, we are afraid, without sufficient foundation. Læfavius and Ruppius have described the farinaceous and pelliciferous plants of this species as two different species. Nor is this, indeed, the only instance of more than one plant being made out of this. It varies extremely in it's manner of growth: it's young leaves are small, and particularly divaricated, so as to seem different plants.

Micheli

Micheli has figured these, and Bobart mentions a variety of it, with segments three times as broad as they usually are; the segments are sometimes also found narrower, and undulated at the edges, in which case the whole surface of the leaf is generally smoother, and, sometimes, it grows very short, and divaricated into a great number of divisions at the extremities.

It is a native of England, but is more common in other parts of Europe, where there are thicker forests. I have met with it, however, very fine in Charlton-forest in Suffex. It grows to the oak, beech, and other trees. Its scutellæ appear in winter.

The botanical writers, in general, have mentioned this species; it is known in the shops, under the name of Pulmonaria; and the common people with us call it, Tree lungwort. Pulmonaria, and Mufcus pulmonarius, are the names also that it stands under in most of the authors. Aldrovand calls it, Lichen arboreus; and Dillenius makes it a Lichenoides. All the authors who have figured it, however, except Micheli, have omitted the scutellæ, which is wonderful, for they are frequent enough on it.

2. *Platysma molle angustius.*

The soft and narrow Platysma.

This is one of the most common Mosses we meet with; not only trees of all kinds are frequently, in a manner, covered with it; but old boards, such as pales, gates, and the like, afford it in the same abundance.

Sometimes one, sometimes more plants, arise from the same root: It is single at the base, and of the sixth of an inch, or thereabout, in breadth; but it soon divides into a multitude of ramifications, which subdivide again into others, and finally terminate in forked extremities. It grows to an inch and half, or two inches, in length, and its tufts often are nearly as much in diameter. Its surface is tolerably smooth; its colour a pale grey, or bright ash colour; and it is remarkably soft to the touch. It is tough and thin, and is of an insipid taste, but with something of astringency in it: it is often full of hollows on the upper surface, and always somewhat downy beneath. Its divarications have been thought by some to resemble those of a stag's horns; they are often dichotomous, as in many of the sea fucus's; sometimes trichotomous, sometimes perfectly irregular. When this plant produces its scutellæ, its segments are usually narrower; the scutellæ grow at the extremities and along the edges. The other plants have, at their edges also, and on the prominent veins that surround the little cavities on the surface, a kind of farinaceous globules, which evidently also serve for the office of fructification. Whether these are the male or female parts, is not known; but they seem in this species to grow on distinct plants from the male, though in the former on the same.

This common species of *Platysma* differs so greatly from itself, under its various circumstances of growth and fructification, that we could point out no less than thirteen several varieties of it, which are described by authors, as distinct species of Lichenoides. While young, its segments are few, and are cristated; afterwards it varies several times, before it arrives at its full growth: when young, it has few depressions; when full grown, it is usually full of them. The segments are sometimes very broad, sometimes very narrow, often fimbriated at the edges or extremities: sometimes the ramifications are few, sometimes they are extremely numerous.

Almost all the botanical writers have described this under the names of Lichen arborum, and Lichenoides arborum. Imperatus calls it, Foglio diramato. Others, Ceratites mufcus arboreus, and Bronchialis. It is singular that Micheli never saw more than one plant of this with the scutellæ, though common enough in Italy. With us the scutellæ are very frequent on it.

3. *Platysma sinuosum scutellis ovato-rotundis.*

Sinuous Platysma, with flat, rounded scutellæ.

This is the species commonly called grey, ground liverwort, and famous for the cure of the bite of a mad dog. It is a large and spreading plant for one of this genus. It grows sometimes single, sometimes several leaves rise from the same base. They are three or four inches long, and are two inches, or more, in breadth, when distinct; but they often grow together in such a manner, as to make a surface of four or five inches broad. The leaf, in its true shape, is somewhat small at the base, and gradu-

ally grows broader, as it extends itself in length, and is longitudinally divided frequently into a number of segments, which are very broad, and sinuated at the edges, and terminated by obtuse lobes, whose extremities bend inward. This is the usual appearance of the plant, but, when it produces the patellæ or scutellæ, these terminating lobes grow narrower and longer, and at their extremities produce the scutellæ, which are reddish in colour, very hard and firm, and of a roundish or oblong form, and somewhat convex on the upper side; on the lower side they are all hollow, and of the same colour with the leaves themselves, which is a paler or deeper ash colour.

The leaves are thin, and of a membranaceous substance; tough, and of a whitish colour, and downy underneath, with very prominent and downy, or hairy, ribs on them, which send off many branches on every side, from whence descend the little fibrillæ, which are the root of the plant, and serve at once to fix it to the earth, and to take in it's nourishment. These ribs, on the lower side of the leaves, have little long furrows answering to them on the upper part.

The plant is frequent with us in barren ground, by ditch-sides, and on heaths; sometimes on the ground, and sometimes about the stumps of old trees. Most of the writers on these subjects have described it. They have called it, *Lichen terrestris cinereus*; this is the name given it by Mr Ray, and which it yet retains in the shops; *Muscus pulmonarius terrestris*, *Muscosungus hepaticæ facie*, and by many other such names. Dillenius makes it one of his great genus of *Lichenoides*: he calls it, *Lichenoides digitatum*, *cinereum*, *lactucæ foliis sinuosis*.

4. *Platysma corniculatum*.

The horned Platysma.

This is one of the most singular species of this whole genus. It usually grows from a firm and hard base, sometimes singly, sometimes many plants in a cluster. It rises from the base with a broad and flat membranaceous or coriaceous substance, as thick as a strong parchment, and of the breadth of a finger, sometimes more, and often less; this almost immediately divaricates into a number of ramifications. The whole plant grows often to be six or eight inches high, and four or five broad: it is very tough and firm, of a greyish colour, and somewhat hoary or downy on the surface. The broadest of the segments are narrower than the main part of the base, and they terminate in long and narrow extremities, which, as they grow from the several lower, as well as upper ramifications, give the whole an appearance of some horn of the stag kind. The extremities are sometimes bifid, sometimes trifid, and sometimes divided into more numerous parts. The scutellæ grow on the edges, and in the middle of the leaves; they are small, roundish, very hard, and of a grey colour; they stand on short pedicles: on other parts of the leaves there are also little, round, farinaceous globules.

This species is not a native of England: we meet with it frequently brought over from the Canaries, among the Orcelle or Canary weed, described under the next genus, and used in dying. It is also common in many parts of the East Indies. It grows on rocks and on trees. There is something, in the growth of all the species of this genus, that greatly resembles the fucus's, but this species has it more than any other of them. The colour of the plant itself, and some other obvious circumstances, distinguish, or ought at least to distinguish, what genus it belongs to, when seen itself; but a figure of it might easily be mistaken for one of a fucus. Most of the botanical writers have described it, but they have called it by a great variety of generic names. Imperatus and both the Bauhines make it a *Fucus verrucosus*; and many others call it, *Fucus verrucosus tinctorius*. John Bauhine also calls it, *Alga tinctoria*, as do many others. Petiver calls it, *Lichen madara spatani*; and Plukenet, *Muscus arboreus-madara spatani*. Kempfer has it under the name of *Muscus in petris altissimis crescens*.

The other species of *Platysma* are very numerous in nature, and much more so in the works of the botanical writers, who, by mistaking their varieties for distinct species, have extended the number vastly beyond it's native bounds. The more singular species, beside the four we have described at large, are, 1. The smooth, endive-leav'd *Platysma*. 2. The *Platysma*, resembling the Fallopian tube. 3. The pale, blue, scolloped-leaved *Platysma*. 4. The dark-coloured, digitated *Platysma*, with lettuce-like leaves. 5. The livid *Platysma*, with reversed scutellæ. 6. The eryngo-leaved *Platysma*. 7. The spongy, buck's horn *Platysma*. 8. The grey, clouded, coriaceous

ceous *Platysma*. 9. The pustulous *Platysma*. 10. The bluish *Platysma*, with black warts. 11. The hairy *Platysma*, with large, perforated, scutellæ; and 12. The chestnut-coloured, horned *Platysma*.

Of the four species of *Platysma* we have described, three are of use, and well known in the shops; the first and third, as medicines; the fourth, in dying.

The first or great tree lungwort has been at all times famous in diseases of the breast and lungs. It has been given in obstinate coughs, and in asthma, in form of syrup or decoction, it is said, with great success; and also in the fluxus albus, and in dysenteries, in which cases it is given in powder, half a dram for a dose. Breynius gives us an account of an obstinate jaundice, cured only by a decoction of this Moss. It is also esteemed a vulnerary. It is not much in use in the shops at present; but physic, like other things, has its fashions: we are not to suppose it the less valuable for such a neglect.

The third kind is the grey, ground liverwort, famous against the bite of a mad dog, and of which is made the pulvis antilyssus, which is only a mixture of half the quantity of pepper with the powder of this plant.

The last species or corniculated *Platysma* is used by the dyers, along with the orcelle with which it comes over; and they imagine it helps the colour, but it is not used any where, that we know of, alone.

M O S S E S.

Class the Third. Genus the Third.

CLADONIA.

C LADONIA is a genus of Mosses, consisting of a firm, tough, and flexible matter, formed into stalks of a roundish figure, sometimes almost simple, sometimes more ramified, and, in many of the species, resembling small shrubs.

The fructification of this genus of Mosses, so far as it is yet observed, resembles in some degree that of the usnea and platysma, there appearing, at the extremities of the branches, a kind of tubercles, somewhat resembling the scutellæ of those plants. These tubercles, however, are usually more prominent, and of a softer texture than the scutellæ of those Mosses. These tubercles are thicker and more fleshy, in general, in the less-branched species, and thinner in the more-branched ones. Micheli determines these tubercles to be the male flowers of these plants; and certain dusty or farinaceous globules, found on other parts of them, to be the female, and contain the seeds. Dillenius is of a contrary opinion, esteeming these dusty globules the male parts, the others the female; perhaps, hereafter, something may be added to the systems of this kind; at present, the whole is much too uncertain to found generical distinctions upon.

Dillenius calls the plants of this genus, together with those of the next, by the generical name *Coralloides*; a term which Tournefort and others have used to denote a genus of branched fungus's, and which, indeed, much better expresses those bodies than these Mosses.

1. *Cladonia furcata.*

The forked Cladonia.

This is the least ramified, or most simple, of all the genuine *Cladoniae*: we meet with accounts of plants of this genus, indeed, in some authors, under the name of *Lichenoides*, consisting of only one single undivided stalk; of this kind is the *Lichenoides caule simplici* of Ray and others, but this is an error; what they thus took for a peculiar species of *muscus corniculatus*, is indeed no other than the first shoot of one of the tall cup Mosses, hereafter to be described, while not yet opened.

This furcated *Cladonia* many have described also under the name of *Muscus corniculatus*. It grows to an inch and half, or two inches, high; it rises with a single stem, of the thickness of a small packthread, of a greyish colour, and hollow; toward the top it divides into three or four ramifications, smaller than the main stem, and terminating in sharp points; these, when simple and regular in their growth, give it

it the furcated figure, from which we have named it; but they frequently grow irregularly, and put on so many different appearances, that the plant has been divided, according to them, into ten or a dozen different species. In the simplest state the top is divided into two, three, or four parts, which stand nearly erect; but at other times these bend downwards, and have other points growing up from them; sometimes the main stalk itself sends off a number of lateral branches. The whole plant is sometimes in great part smooth and naked, at others there are a sort of green, foliaceous excrescences, roundish and very short, growing all over it. It very rarely produces any tubercles; but, when it is in it's most ramified state, they are most frequent upon it; they stand at the tops of the ramifications, and are small, roundish, and of a brown colour.

This species is very frequent in dry places, on heaths, and in woods not too shady; Hampstead-heath produces abundance of it. The generality of authors have described it under the names of *Muscus corniculatus*, and *Muscus ceratoides*. Tournefort calls it, *Coralloides cornua cervi referens*; and Linnaeus, *Lichen caule erecto, dichotomo, ramis subulatis*. Tabernomontanus has a good figure of it, but no description. C. Bauhine confounds it with the *Filix cornuta saxatilis*, which is wonderful in so accurate a writer. Parkinson gives a bad copy of Tabernomontanus's figure, and a false description adapted to it: he seems never to have seen the plant. Johnston has made Gerard, on this head, worse than he was, by putting C. Bauhine's figure of the *filix saxatilis cornuta*, instead of Tabernomontanus's figure, which Gerard had copied. Upon the whole, it is something singular, that there is scarce any plant more common than this, and scarce any one about which the botanical writers have blundered more.

2. *Cladonia ramosissima cava.*

Branched, hollow Cladonia.

This is a very beautiful species. It rises from the earth with sometimes a single stem, sometimes two or more together, and often with smaller and shorter plants about them. The main stalk is of the thickness of a large packthread, and sends off a multitude of branches on every side, which are again divided and subdivided into smaller, so that the whole form the appearance of an extremely ramose, little shrub. The whole plant is generally two or three inches in height, and an inch or more in diameter. The main stalk and ramifications are all hollow, and the tips of the extreme ones generally bend downwards; the several branches, in their growth up, frequently grow to one another; and, the several plants, from the same common base, often entangling their branches with one another, the whole cluster generally appears strangely interwoven and confused: the subdivisions which terminate the ramifications are very short and fine, and are often four or five in number from each. The tubercles grow on the extremities of these fibrils, and are small, roundish, and of a brown colour at first, but afterwards they grow almost black. The whole plant is flexible, but not very tough, a small force breaking it's largest branches. It never has any of those foliaceous excrescences common on the former. Such is the general appearance of this species, but it varies extremely in it's manner of growth, and has thence been described by many authors under the names of various species. The branches are sometimes terminated by stellar expansions, sometimes the main stem is wanting, and the whole plant looks reticular.

It grows abundantly all over Europe. The more northern climates abound most of all with it, but our heaths afford a very large quantity of it. It is described by authors under the various names of *Muscus corallinus*, *Muscus coralloides*, *Muscus tubulosus ramosissimus*, and the like. Dillenius calls it, *Coralloides montanum fruticuli specie ubique caudicans*. Micheli, *Lichen coralloides receptaculis florum rufescentibus perexiguis*; and Linnaeus, *Lichen caule erecto, tereti, ramosissimo, alia perforatis filiformibus*. Ray, in his Catalogue of the English Plants, commends Gerard for the just description he gives of this Moss, but, somewhat unluckily, for Gerard describes the common coralline under it's name. His editor and emaculator Johnson did not find this out; but Ray prudently omits his encomium on Gerard, in his subsequent works.

3. *Cladonia ramosissima solida*.
Solid, branched *Cladonia*.

This is an extremely pretty little plant, considerably smaller than the former, but not less branched. It usually rises with a single stem, of the thickness of a small packthread, but not round, but somewhat flattened. This scarce continues single the third of an inch; it almost immediately divaricates into two or three branches, and each of these into as many others, which in the same manner divide again and again, till in fine they form an extremely ramose cluster: all these branches, as well as the main stem, are flattened, and they are all solid, not hollow, as in the former kind. It grows to about an inch in height, rarely more, and is throughout of a brown colour; the larger branches of a paler, and the smaller ramifications of a deeper brown. The whole plant usually forms a sort of little bush, at least as much in diameter as in height, and the extremities of the ramifications are terminated by a kind of prickles, the fibrils into which they there divide being all solid, and sharp at the points. These are weaker and more obtuse at first, but, as the plant grows to it's full size, they become sufficiently hard and rigid: they grow not only at the extremities, but along the sides also of the branches. There are never any foliaceous excrescences on this plant, but it's branches are bare, smooth, and, when broken, are found to have a kind of pith within.

It grows on heaths, and in other barren places in England, and elsewhere. Hampstead-heath affords it, in some few places, not very sparingly, but most of our botanical people overlook it there. It is described by Ray under the name of *Muscus montanus fuscus, ramosissimus, solidus*. Merian calls it, *Muscosungus, coralloides, fuscus*. Dillenius, *Lichenoides fructiculi speciei, fuscum, spicatum*. Buxbaum calls it, *Lichen coralloides, aculeatus, nigricans*; and Micheli, *Lichen terrestris, atrofuscus, minor, veluti aculeatus*. He has another which he calls Major, and which is evidently but a variety of this.

4. *Cladonia tophacea*.
The tophaceous *Cladonia*.

Orcelle, or Canary-weed.

This is a very singular species of *Cladonia*, known by our dyers under the name of Orcelle or Canary-weed. It has for it's base a broad and tuberos lump of a tophaceous or calcareous matter, from which there arise two, three, or four, sometimes more stalks; these are cylindric, and somewhat rigid, but tough, and not easily broken; they grow to two, three, or sometimes four inches high, and are sometimes straight and erect, sometimes crooked and variously bent; some of them are simple or undivided, but others are branched into two, four, or more segments, which are usually long and slender, but sometimes very short. The colour of the whole is sometimes a pale grey, sometimes a dusky brown, or blackish. The surface is smooth, and the whole plant soft to the touch; the branches are all solid, and contain within them a tophaceous matter, like that of the base; some have more, some less of it, but few of them are without a considerable portion of it. The usual thickness of the main stalks is that of a moderate packthread; in different parts of the branches there appear frequent little depressions, and tubercles of various forms, flattened, more prominent, or absolutely rounded; they are usually of a dark brown colour, and are very hard, when broke; they are found to contain a tophaceous matter resembling chalk, wholly the same with that of the base. These tophaceous tubercles are originally contained in a sort of cups, resembling the scutellæ of the common *platysma*.

It is not a native of England, but it is extremely common in many other places on the rocks about the sea-coast. It is frequent about the Archipelago, and in the Canary Islands, whence we receive it.

This species has been known from the earliest times we have any account of. It's growing near the sea made the antients call it a focus, and it has, indeed, a division in it's ramifications, not unlike that of those plants. Theophrastus was well acquainted with it; he calls it, *φωκίον φάειον*, and tells us, that it grew in Crete, on the rocks near the sea, and that they dyed woollen garments red with it. Dioscorides gives it the same place for it's origin, and calls it, *φάειον θαλάσσιον*; and Pliny borrows his name,

and Theophrastus's account of the use of it. At present our mercantile writers have called it, Orifella, Orifelle, and Roccella. Many of the botanical authors have named it, Fucus tinctorius, and Muscus rupeus insectorius. Tournefort calls it, Licheo Græcus, polypoides, tinctorius; and Boerhaave, Muscogungus ceranoides, albus, tuberculatus, apicibus nigris. Micheli calls it, Lichen saxatilis, italicus, polypoides, cinereofuscus, crispus. Thewet was the first person who taught us the name of Orifella for it; and some of the writers of that time misunderstood him so far, as to give this as a synonymen of the genista tinctoria.

The species of this genus, beside these three, are considerably numerous in nature, and appear much more so in authors. The more singular among the hollow kinds are, 1. The great, soft, open Cladonia. 2. The curled Cladonia. 3. The prickly, distorted Cladonia. Among the solid ones, 1. The black, reticulated Cladonia. 2. The tuberculose Cladonia. 3. The coralline-like Cladonia. 4. The cypress-like Cladonia. 5. The fucus-like Cladonia. 6. The pod-like Cladonia. 7. The short-pointed, perforated Cladonia.

The Cladoniae are not without their use in medicine, and in the arts and manufactures. The first species described here, called the Horned Moss, has been long famous in form of a syrup or decoction against coughs, and other diseases of the breast. The second kind has the name Rain-deer Moss, from it's serving as food for the rain-deer of Lapland, and other cold countries, when no other is to be had. The last species or orifella is well known for it's use in dying. The Dutch had at one time the secret of manufacturing it to themselves; but at present it is done in London, by a set of people called Argol or Orchel-makers. It gives a red in various degrees, and shades, but it does not stand well. Urine and pot-ash seem to be the ingredients used to extract it's colour.

It is singular that this Cladonia has it's fructifications, not at the extremities, as all the rest of this genus have, but on the body of the branches, as the species of platynia; though, in all respects beside, it agrees with the Cladonia, and indeed very much resembles the less-branched kind first described.

I remember to have observed several species of the Cladonia on Rook's-hill near Goodwood, full of a tephaceous matter, such as fills up this orifella. It would be well to try whether such a colour might not be drawn from them.

M O S S E S.

Class the Third. Genus the Fourth.

PYXIDIUM.

PYXIDIUM is a genus of Mosses, consisting of a firm, tough, and flexile matter, formed into the shape of hollowed cups or drinking-glasses, with longer or shorter stems. The parts of fructification in this Moss greatly resemble those of the Cladonia. They are large, soft tubercles, of a convex form, and of a brownish, blackish, or red colour, affixed to the edge of the cup, sometimes on pedicles, sometimes without. The tubercles in the Pyxidia are larger and softer in general than in the Cladonia. In some of the species of the Pyxidia, the cups are very fair and perfect, in others they are less; in some scarce distinguishable.

Linnaeus and Micheli make these all species of the vast genus of lichen, and Dillenius makes them of his genus of coralloides; though, if he had considered his intent of bringing them into it, 'tis probable he would have given some other generic name to the whole.

1. *Pyxidium margine leviter serrato.*

Common Cup-moss.

This is a species of Pyxidium, in it itself almost too common for description; but it's varieties are extremely worthy to be noted, as they have led authors into the error of describing this species under different names, as eight or nine different plants.

The first appearance of this Moss is in a granulated crust, extending itself an inch or two, sometimes much more, over the ground; this, by degrees, expands itself so as to form a sort of leaves of a perfectly irregular and indeterminate figure. They are sinuated at the

the edges, of a greenish colour on the upper side, and whitish underneath; at the bases of these leaves arise the cups; they consist of a pedicle smallest at the bottom, and larger higher up, terminated by a hollow cup, resembling a drinking-glass; the general height of the whole plant is three quarters of an inch, and the colour a greenish grey: the edge of the cup is very lightly serrated. Such is the common appearance; but it sometimes has the whole cavity of the cup covered with greyish globules, and after these have tubercles of various size and form, growing at it's edges. Sometimes the cups expand to the breadth of a shilling, and sometimes they will scarce admit the head of a pin in the full grown plants, of the same species; in some the tubercles stand close on the edges of the cup, in others they are raised on pedicles, and in others new cups on their proper pedicles grow from the old one, and these only bear them; in this case the Cup-moss is called proliferous, and is described as a peculiar species by many. These secondary cups sometimes grow from the sides, sometimes from the center of the old cup, and they often bear others upon them, so that it is common enough to see three, sometimes four, series of them one over another.

From this and many other parallel circumstances, there appears reason to believe, that these tubercles are neither male nor female parts of fructification, but a kind of soteles, like those of the dentaria foliolifera, and some other plants, which are ready to vegetate into new plants wherever they fall, and which falling into the cavity of the cup that produced them, or remaining only too long on it's sides, take root there, and grow, as they would have done on the earth; and perhaps this is not singular to the Cup-mosses, but it may obtain in all of this class.

These are the various forms under which this *Pyxidium* appears, and under these it has been called *Muscus Pyxidatus major*, *minor*, *prolifer*, and *tuberculifolius*. Linnaeus himself has not escaped this common error of mistaking the varieties of this plant for species, but describes it, in it's common state, in one place, under the name of *Lichen caule simpliciter*, calyce *turbinato*, *marginis tenui*; and in another, in it's central proliferous state, under that of *Lichen caule simpliciter*, calyce *turbinato*, *centro simpliciter prolifero*.

This Moss, in it's common state, is found on every barren place almost in the kingdom; in it's various proliferous states, we meet with it on Hampstead-heath, and in the woods about Harrow.

2. *Pyxidium gracile marginis laciniato.* *The slender Pyxidium, with jagged edges.*

The first appearance of this Moss is in form of a scabrous crust, which gradually unfolds itself into leaves of a greenish colour on the upper side, and grey underneath; from the bases of these leaves arise cups of three quarters of an inch high. The pedicles of these are slender, the cups themselves moderately wide and deep, and their edges somewhat deeply jagged; they are of a dusky, greyish-brown colour, with some admixture of green in it; and have sometimes little foliaceous excrescences about them, like those at the base: this species generally grows in considerable clusters together. It is very rarely met with, with the tubercles upon it: they are small, prominent, and brown, and stand on the sides of the serratures.

This is also more rarely proliferous than the common kind, but it is sometimes met with proliferous to a second or third degree from the center, very rarely from the sides.

Many of the botanical writers have confounded this with the common Cup-moss; and others of them, not content with separating it from that, have made two or three species from it's varieties in the different states. Morison describes it, in it's simple state, under the name of *Muscorum Pyxidatus saxatilis*; and Micheli describes it twice in two of it's states, once under the name of *Lichen Pyxidatus minor*; and a second time under that of *Lichen non ramulosus, acetabulis fimbriatis*. Vaillant has given a very good figure of it, but the serrature of the edges ought to have been expressed deeper. Micheli's first figure does not represent the plant well; his other is better, but the lacinae are too thick. Linnaeus met with it in Lapland, in it's uncommon state of proliferation from the edge; he has described it under the name of *Lichen caule simpliciter*, calyce *turbinato*, *marginis aboto prolifero*.

It is common enough in England, in it's simple state; and I remember to have seen it proliferous to the third degree from the center, on the thatch of a house, in the way to Burntwood in Essex.

3. *Pyxidium*

3. *Pyxidium elatius pyxide minima.*
The tall Pyxidium, with very small cups.

This makes it's first appearance in form of a coarse, scabrous crust, expanded over the earth for three or four inches sometimes, and of a greyish colour. This afterwards expands into a foliaceous matter, of a greenish colour on the outside, and grey underneath. In the midst of this there rise up ten, twenty, or more stalks, from the same crust; these grow to the height of two inches, and are of the thickness of a small pack-thread. They are sometimes strait, sometimes crooked, and, though usually single all the way up, they sometimes divide, toward the top, into two, three, or more branches. They are hollow, of a greyish colour, and are sometimes smooth, sometimes covered with a dusty, excrementitious matter, and sometimes they have little excrescences, like leaves, growing on their surface, in the manner of those from the crust. People, who have met with it in this state, have described it under the name of a *Muscus corniculatus*, never supposing that it would, when perfect, be of the cup-kind. When full grown, the tops of the plant, or of it's ramifications, if it have any, open into a very small and shallow kind of cup, round the edges of which there stand the fructifications, in form of small, brown tubercles. These, as in the other *Pyxidias*, sometimes stand close on the edge of the cup, sometimes they are elevated on little pedicles, and, in some places, it is met with proliferosus, in which state it makes a very singular figure.

The variety of forms under which this Moss appears, not only when it's cups are opened, but before, is surprizing. It is accordingly described by authors under the names of various species of lichenoides; and these errors have helped not a little to swell that genus into so vast an extent.

It is extremely common on our heaths, and in other barren places. Merret has described it under the name of *Lichen tubulatus*; Doody calls it *Muscus licheniformis cornu simplici*, under which name it stands in the Synopsis of British Plants. Tournefort calls it *Lichen tubulatus cinereus*, and Linnaeus, who met with it in Lapland, calls it *Lichen caule simplici, tubulato, rarius bifido*. Micheli describes it, three times, under as many names, in three of it's different states.

The other species of this genus, really distinct from these, and from one another, are considerably numerous: of the *Pyxidias* with perfect cups, the principal species are, 1. The *Pyxidium* with scarlet tubercles. 2. The short-footed *Pyxidium*. 3. The elk's-horn *Pyxidium*. 4. The tall-branched and jagged *Pyxidium*. Among those with less conspicuous cups the principal are, 1. The thigh-bone *Pyxidium*. 2. The corniculate *Pyxidium*. 3. The ramose *Pyxidium*. 4. The scarlet-headed, branched *Pyxidium*. 5. The brown-headed, simple, tall *Pyxidium*. The names of these, after the description at large of the others, will be sufficient to distinguish them.

All the Cup Mosses have been famous, throughout several ages, for the cure of coughs of the most inveterate kinds, and particularly for what is called in children the chin-cough: the common one is the species most recommended. It has not been of late received into the shops, or prescribed by physicians; but it is of the number of those things which an established reputation for ages, and a multitude of accounts of cures performed by them, ought to recommend to a trial in the shops.

M O S S E S.

Class the Fourth.

Such as consist merely of a dry, crustaceous, or else of a gelatinous matter.

Genus the First.

PLACODIUM.

PLACODIUM is a genus of Mosses, consisting of a friable, or of a gelatinous matter, formed into crusts, or flat cakes, sometimes merely scabrous, and granular, but, at others, somewhat foliaceous about the edges.

The

The fructification in this genus appears in form of bractæ, or spangles, on the surface of the plant, and principally about the center; these are very various in their figure, sometimes prominent, like the tubercles of the pyxidia, sometimes flat, and sometimes hollowed, like the scutella of the species of platysma. These different figures appear not only on the different species, but in the fructifications of the same plant, in their different degrees of maturity. The foliaceous terminations of the matter of these Mosses are more perfect in some, and less so in others and in some they are closely adixed down to the substance they grow upon. In others they are more loose and free; in some they are regularly divided into segments, and only fixed down by cirri. Dillenius has ranked these among his lichenoides, and Micheli and Linnæus, in their yet larger genus of lichen; and it is to be observed, that some of the lycogala of Micheli evidently belong also to this genus, and also that some plants which Dillenius has arranged among these are pyxidia, or cup Mosses; what he calls crustaceous in them being no more than the foliaceous base common to all the plants of that genus.

1. *Placodium bracteis majusculis limbo albo cinctis.*

The Placodium with large bractæ, edged with white.

This is of the number of the less beautiful Placodia. It has nothing foliaceous about it, but is a mere scabrous, irregular crust, of a dry, friable, granulose matter, and of a grey colour. This crust rises in prominences in some places, and has depressions and cracks in others, with irregularly undulated lines in the several parts. It is usually covered with a somewhat coarse grey powder, easily rubbed off with the fingers; and, about it's center, it produces large bractæ, twenty or more upon a plant. These are at first closed at the top, but they in time open into a kind of cups. They have no pedicles, and are but little hollowed; their cavity is brown, but their limb or edge all round is white.

The whole plant is thick, but very brittle. It does not form itself into regularly figured crusts, but extends any way to the length of an inch or two, and often as much in diameter. It grows on old walls, on the barks of trees, and on the ground. Micheli describes it under the name of Lichen crustaceus saxatilis, farinaceus, verrucosus, candidus, omnium crassissimus, receptaculis florum nigricantibus. Dillenius calls it Lichenoides tartareum, farinaceum, scutellatum umbone fusco, and tells us that Cellius, who sent it him from Upsal, told him it would make an excellent red dye. We have it in Leicestershire and Warwickshire very abundantly; and not only this, but many other of the Mosses both of this and the former genus, contain a matter so very like that of the orkella, that they deserve to be tried for producing the same colour, most of them being plentiful enough at home.

2. *Placodium areolatum bracteis flavis.*

Areolated Placodium, with yellow bractæ.

This is a much handsomer species than the former. It always grows in a circular, or nearly circular form, and is closely fixed down to the substance it grows on all the way through, but somewhat less so at the edges than in the middle. It consists of a very thin and fine crustaceous matter, of a strong yellow colour, very friable, and appearing only granular toward the center, but formed into somewhat of a foliaceous appearance at the edges, and undulated and sinuous, though without distinction into leaves, lobes, or segments. The male and female parts of fructification seem to be on different plants; some of those, evidently of the same species, being less regularly formed, less round in their growth, and less foliated at the edges, and having a dusty, farinaceous matter in little granules; and others producing bractæ. These are, at first, yellow in the center, but white at the edges, and a little hollow; but, as they grow larger, the white limb vanishes, and they grow plain and yellow, and sometimes they become prominent in the middle; the bractæ and the farinaceous matter are sometimes both seen on the same plant in this species, but that is less common.

It is frequent with us on walls and stones, and sometimes on old trees. Micheli describes it under the name of Lichen crustaceus saxatilis, crassa tenuiore lutea, receptaculis florum saturate arctis. Buxbaum calls it Lichen saxatilis, leprosus, croceus.

3. *Placodium lobatum bispidum.*
Hairy, lobed Placodium.

This species has somewhat of the appearance of the platyina, but its divisions are all fixed down at the edges by cirri, and its bractæ are of the form of those of this genus. It grows to two or three inches in length, and as much in breadth, but rarely extends itself in a regularly circular form. It consists of a kind of leaves, divided into a number of narrow and oblong lobes, obtuse at their ends, of a pale bluish colour, and furnished all round with long cirri, by means of which they are affixed down to whatever they grow upon. The ramifications are, in general, somewhat convex on their upper side, and hollow underneath; and, those of several plants, which stand near one another, intertangling together, there is often met with a crust of this Moss, extending to a vast breadth. The cirri are sometimes black, sometimes grey, and, though they fix down the divisions of the leaves, they do not pull them close to the substance they grow on. The bractæ are very frequent on this species; they grow both from the middle and edges of the leaves; they stand on moderately long pedicles, and are hollow at first, but, afterwards, plain; their middle is black, their edge grey, and this edge, or limb, is sometimes dentated and prominent, sometimes plain; and even some of these plants are found full of little, verrucose protuberances; these are of the same colour with the leaves, and, when cut open, are fungous within. It is frequent on trees and bushes. The common sloe-trees about London afford a great deal of it, and old gates and pales are frequently, in a manner, covered with it. Most of the botanical writers have mentioned this species. Columna has it under the very long name of *Placodium lobatum bispidum*; Caspar Bauhine calls it *Muscus arboreus capisulis cavis*; Merret, *Muscus arboreus nimblicatus*; Tournefort, *Lichen latifolius, ramosus, minor, hirsutus*; and Morison, *Muscosungus arboreus, cinereus, scutellatus, marginibus pilosis*. Columna has described it very perfectly; the rest are deficient.

4. *Placodium durius candidum.*
White, hard Placodium.

This is the hardest of all the Placodias, but it crumbles to powder, like the rest, if rubbed forcibly between the fingers. It grows in an irregular form, extending to an inch or more in length, and as much in diameter: it is moderately thick, and merely granular, having nothing foliaceous about its edges. It is usually cracked in several places, and is often covered almost intirely with a grey, farinaceous matter. Among this appear the bractæ, which are small, convex, and of a black colour. It grows on rocks in Wales and Scotland, and is called, by the country people, Cork, Corker, and Kenkerig. The Scotch, and some others, have a way of dying scarlet with it. they prepare the dye by steeping it in wine, much as our orfelle-makers do that from the o-sella, or canary-weed. It is highly probable that many other of these crustaceous and tophaceous plants would do the same.

The species of Placodium, beside these, are, in nature, a great many, in authors more: Micheli has not given much less than a hundred, and Dillenius yet more. A great many of the figures of both these authors, however, give us only the different appearances of the same plant, under the names of different species. The more singular ones, beside these, are, 1. The lined, crusted Placodium, in which somewhat-like characters are seen. 2. The pale, crusty Placodium, with brown bractæ. 3. The yellow, lined Placodium. 4. The Placodium with red tubercles. 5. The large, bracteated Placodium, or crab's-eye Placodium. 6. The black, spangled, leprous Placodium. 7. The areolated, grey Placodium. 8. The lobed, gelatinous Sea-Placodium. 9. The curled, gelatinous Sea-Placodium. 10. The opuntioide, gelatinous Placodium. 11. The transparent, endive-leaved Placodium. 12. The common, blue, curled Placodium. 13. The common, yellow, curled Placodium. 14. The greyish-brown, tree Placodium, black underneath. 15. The blunt-horned Placodium. 16. The grey, flat, black-haired Placodium.

M O S S E S.

Class the Fifth.

Such as produce capsules covered with opercula.

Genus the First.

B R Y U M.

BR Y U M is a genus of Mosses, consisting of a stalk furnished with leaves, or of a cluster of leaves, rising immediately from the root; and producing a separate pedicle, with a capsule on it's summit, covered with a smooth operculum, or calyptra, of a conic figure, and containing a fine powder: the pedicle arising either from the center of the radical leaves, or from the summit of the plant, or of it's branches, or, finally, from what was the summit of the plant or branches of the last year, and being somewhat tubercle at the base, and not surrounded with any particular involucre.

The smoothness of the calyptra distinguishes the Bryum from the polytrichum, and the want of a peculiar involucre at the bottom of the pedicles, as also their growing from the summits only of the branches, distinguish it from the hypnum. Linnæus, attempting to range the Brya according to their fructifications, makes the cylindric figure of the capsule a part of the character; but this is erroneous, for many of the species have it quite round, or globular, some oval, some flattened, and some falcated. This author, according to the doctrine of Micheli, also supposes these capsules to be the antheræ, or receptacles of a farina fecundans, and, consequently, to be the male part of the fructification: but it is wonderful that he was not convinced of the mistake of Micheli in this, by observing, that, in neither this genus, that of the hypnum, or any other that produces this kind of capsule, except in the polytrichum only, he could ever find any thing that it was possible to take for a female flower.

To us the matter contained in these capsules appears to be the true and perfect seeds of these little plants, and the farina, or male impregnating matter, to be lodged in antheræ, arranged on the pyramidal bodies, which grow from the top of the capsule, under the calyptra, and which, meeting in a point over it, form what he calls an acuminate operculum.

The species of Bryum are extremely numerous. Dillenius has figured no less than fourscore of them: we shall give descriptions at large of four species, which will express all the variations in the general figure of these beautiful little plants; the rest will easily be understood by one or other of these.

1. *Bryum acaulum calyptra quadrangulari.*

The stalkless Bryum, with a square calyptra.

This species is of the number of those which consist only of a cluster of leaves, arising immediately from the root, with the pedicle supporting the capsule, growing from the midst of them. The first appearance of this plant, in this beginning of winter, is this: a cluster of leaves, eight, ten, or more, spread themselves every way from the root, in form of a radiated star; they are broad, and rounded at the base, and terminate in a point: they are perfectly smooth and glossy, and of a very pale green. Soon after the appearance of these, a fine white pedicle, like a hair, is seen arising from the midst of them, and this, after some time, shews a square calyptra on it's top, covering the rudiments of the capsule: the capsule, some time after, grows to it's full size, and the pedicles, which were at first white, now become reddish, and the leaves, instead of remaining expanded in the figure of a radiated star, collect themselves about the base of the pedicle, and form a sort of bulb there: the calyptra, at first of a pale straw colour, now becomes of a yellowish green, and the pedicles, which before were erect, bend down, in form of a semicircle, or of a larger part of a circle. The calyptra being pulled off, the heads are now found to be of a pear-fashioned shape; they are not ripe, however, till April, at which time they are of a fine gold-yellow colour, as are also the pedicles. The capsules, when fully ripe, are somewhat crooked, and the aperture,

aperture, with it's ring and the pyramidal bodies over it, is not in the middle of the capsule, but on one side; when opened, they are found to contain a fine yellow powder. When there is plenty of nourishment for this Moss, it sometimes rises into a kind of stalk, carrying this bulb, which was once the congeries of star-like leaves at the top; this is common also to all the other aculeous Brya; so that they cannot, with perfect strictness, be called by that name, though it very well expresses an obvious distinction in the common appearance of the plant. This is so extremely common a Moss, that scarce any of the botanical writers have omitted a description of it. Vaillant calls it *Mossus foliis scutellatis capitulo pyriformi nutante*; Tournefort, *Mossus capillaceus, folio rotundiore, capsula oblonga incurva*; and Dillenius, *Bryum bulbiforme, aureum, calyptra quadrangulari, capsulis pyriformibus nutantibus*. The old authors, in general, call it *Polytrichum aureum minus*, and *Polytrichum Apuleii*. It grows in great abundance on our heaths, and even by way-sides; it thrives best in places where there is moisture.

2. *Bryum stellare, cauciculatum, capsulis ovatis pendulis.*

The starry, cauciculate Bryum, with oval, pendulous capsules.

This is one of the most beautiful of all the genus of Bryums, and appears in the greatest variety of forms of any of them, inasmuch that, in it's different states, it has been described under various names, as different species. It is, in it's most general and perfect state, erect and simple; but it is, also, sometimes erect, ramose, and larger, and sometimes procumbent, and so wholly unlike every thing that it has in it's common appearance, that nothing, but the having observed it's changes, could have discovered that these it's several states and appearances were all but the variations of nature in the vegetation of a single plant. In it's perfect state it consists of a fibrous root, a single stalk of about three quarters of an inch high, a pedicle of about the same length, and an oval capsule, bending downwards, and covered with a conic calyptra.

The stalk is furnished all the way up with small, short, and obtuse leaves, approaching, in their figure, toward roundness; at it's summit there grow a cluster of leaves, of a different shape, oblong and pointed, and much larger than the others. These are disposed in form of a radiated star, and, from the center of these, arises the pedicle; which is yellow, it's tuberos base reddish, and the capsule large, and full of a greenish-yellow powder.

Sometimes, instead of a pedicle to sustain a capsule, there arise, from the starry top of the stalk, three or four branches, thick set with long and narrow leaves, very unlike those of the lower part; and sometimes these branches shoot out from the axils of the leaves of the main stalk, not from it's summit; in either case the plant grows to two, three, or four inches in height, and has an appearance wholly unlike itself in it's former more natural state: but it's most singular appearance of all is, when it trails upon the ground, as it will sometimes do, to the length of three or four inches. In this state it somewhat resembles the trichomenes. It's stalks are roundish, and are furnished with short and roundish leaves on each side, growing smaller as they approach the point; and the stalk sometimes divides at that part, and becomes biuid; sometimes it sends out other branches, and is all the way fastened down to the ground by little roots. The leaves, in all these states of the plant, are smooth and glossy, and, if examined by the microscope, they are found to have their edges finely serrated, and to be terminated by a sort of weak spine.

This species is common in damp places, a little shadowy: Hampstead-heath furnishes abundance of it, and that in all it's states.

Many authors have taken it, in it's creeping state, for a lichenastrum; but Hoffman very judiciously observes, that it may always be distinguished not to be of that genus of plants, by the serrature of the leaves, and by their ending in a kind of spine. Panconius has favoured the error of taking it for a lichenastrum, by figuring it as growing in circular clusters, and with an odd leaf at the end of the rib, or stalk; but this is not in nature: it grows irregularly and scatteredly, and has no odd leaf, it's extremity being either fixed down by roots, or terminated in a scutulated point. Plukenet has figured it in an ill posture, and from a decayed specimen, the leaves being curled up, which they never are while the plant is growing.

Tournefort has described it twice; once under the name of *Mossus palustris foliis subrotundis*, and once under that of *Mossus polytrichoides, polycepalus, chamaefices folio*.

Hoffman

Hoffman calls it, *Muscus trichomanis facie foliis utrinque rotundis et splendentibus*; and Dillenius, in his *Catalogus Giffensis*, describes it three times, as he confesses in his History; once under the name of *Bryum nitidum foliis serpylli pellucidis subrotundis elatis*; a second time under that of *Bryum nitidum foliis inferioribus serpylli superioribus angustis et oblongis*; and a third under that of *Lichenastrum trichomanis facie*. If so accurate an author as this was deceived by the various appearances of this Moss, there is no wonder that others should describe them as various species.

3. *Bryum cauleculatum capsulis sphericis.*
The cauleculate Bryum, with round capsules.

This is of the number of those Bryums, whose pedicles arise from the heads of the stalks of the year before; so that, other branches having grown from them, in the mean time, these, till this circumstance is understood, seem to emulate the character of the hypna, and to protrude their pedicles from the midst of the branches. There is, however, another great character which distinguishes all these Bryums, which is, that the pedicle has no foliaceous involucre at the base, as those of all the hypna have.

This very beautiful Bryum grows to about an inch and half in height, without the pedicle; and, several of the plants always growing together, they make a very pretty tuft, sometimes of a foot broad. The young plants are simple, but the taller ones are branched; that is, second and third year's shoots having grown from them, two or three for each year, they appear to be somewhat ramose. The leaves stand extremely thick and close about them, and are oblong, very narrow, and of a carinated form, and of a beautiful pale green colour. The pedicles for the capsules appear in February; some growing from the summits, some from the sides of the branches, according to their several periods of growth. They are fine as hairs, of a reddish colour, and tuberculous at their bottom: the capsules are ripe about May, and soon after fall off; they are perfectly round, and have an obtuse, short calyptra, which generally falls off very soon after they have acquired their full size.

It is not unfrequent on ditch-banks, and readily distinguishes itself there by its fine, bright, green colour, and the largeness of its tufts. It grows plentifully on Hampstead-heath, and about Harrow. Ray has described it under the name of *Muscus trichoides, medius, capitulis sphericis*; and Morison, under that of *Muscus trichoides, minimus, sericeus, capillaceus, capitulis sphericis*. Linnæus under that of *Bryum caule recto foliis setaceis capitulis globosis*.

The capsules are made too large in Morison's figure, and in Vaillant's the leaves are too broad; the operculum is figured too acute in them both; it is in nature obtuse.

4. *Bryum ramosum lanuginosum.*
Branched, hairy Bryum.

This is of the number of the Bryums, that are truly and really branched. It is, indeed, as much so, as the generality of the hypna; but the pedicles grow all of them from the extremities only of the branches, not from their sides, and have no foliaceous involucre at the base, which is naked and tuberosus, as in the other Brya.

This species sometimes is found single, sometimes in tufts, and those of considerable extent, a great quantity of the plants being entangled one with another. It grows to five or six inches in length, and its stalks are somewhat rigid, yet they do not support themselves erect, but trail upon the ground, and take root at several places. They are sometimes single, sometimes divaricated, and always send off on each side a number of branches, which are sometimes simple, sometimes themselves furnished with others; these branches are closer set with leaves than the main stalks, and consequently they appear thicker. The leaves are very narrow, of a whitish, green colour, and all terminate in long, white hairs at their points; they stand very close together, and quite hide the stalks. From the summits of these branches there proceed pedicles very fine, like hairs, and of a pale yellow colour; they are short, and bear short heads of a somewhat roundish figure, but pointed at the summit, and covered with a conic and sharp-pointed calyptra.

It is frequent on the Alps and Pyrenean mountains, nor is wanting, in that great resource of the Mosses, England: we have it on Mendip-hills abundantly, and in some other places. The more singular species, beside these, are, 1. The slender, star-top'd Bryum, with round heads. 2. The croet-shaped Bryum of Dillenius. 3. The sickle-leaved, bending Bryum. 4. The green, cluster, Alpine Bryum. 5. The long-shanked, curled Bryum. 6. The dwarf, long-shanked Bryum, with hairy leaves. 7. The branched Bryum, with pendulous heads. 8. The shrubby Bryum, with long, transparent leaves. 9. The round, transparent-leaved Bryum, with pendulous heads. 10. The small, brittle, whitish Bryum. 11. The Norway Bryum, with a scarlet umbrella-head. 12. The membranaceous, blunt-leaved Bryum.

M O S S E S.

Class the Fifth. Genus the Second.

POLYTRICHUM.

POLYTRICHUM is a genus of Mosses, consisting of stalks furnished with leaves, and producing separate pedicles supporting capsules. The pedicles always growing out of the extremities of the stalks, and the calyptræ, which cover the heads, being hairy, the calyptræ of many of the species are composed merely of a downy matter, and frequently they are deeply dentated at the edges; in the other species, tho' they are membranaceous, they are thick covered with hairs. The leaves of some of the species are rigid, in others they are softer; in some they have a membranaceous appendage at their base, by means of which they embrace the stalk; in others this is wanting.

The pedicles of the capsules, in this genus, are inserted into a tube at their base, which is surrounded with membranaceous leaves. The capsules, in some of the species, are square, in others they are round: the square ones have an apophysis at their base, by which they are connected to the stalk; the round ones have nothing of this. The summits of some of the stalks, which do not produce capsules, are stellated.

These Linnæus calls the female plants, and the stellar part the female flower; but there requires a more perfect discovery than has yet been made of the fructification of these plants, in order to the determining this with certainty.

The Polytricha, in their manner of growth, greatly emulate the brya. Some of them have no stalks, but only a cluster of leaves at the base; some consist of single stalks, some are ramose in the manner of the bryum, from the growth of a second year's shoot upon that of a former; in this case the pedicle arises, as in the bryum, from the summit of the last year's stalk, and seems therefore to arise from the side of the plant, not from its top.

1. *Polytrichum simplex capsula quadrangulari foliis serratis.*
The square-headed Polytrichum, with serrated leaves.

This is a very tall and large Moss, though its stem is of the simple kind. It grows to six or eight inches in height; its stalks are strong and rigid, and its roots considerably long, spongy, and fibrous. Part of the stalk is usually buried in the ground, and that has short slender leaves, but sparingly set on. The part that is above the surface has, on the contrary, much longer, larger, and closer set ones. They are of a dark, green colour, broadest at the base, and thence tapering to the point; and, when examined very nicely with the assistance of a small magnifying glass, they are found to be very finely serrated round the edges; the stalks sometimes break into two near the top, but it is very rarely. The pedicles of the capsules arise from the center of the leaves that cover the top of the stalk; they are very robust, and two inches or more in length, and are surrounded at the base with a set of leaves, broader, thinner, and more pellucid than those on the stalk; these surround the base of the pedicle closely, and, when removed, discover a purple tube, into which it is inserted. The base of the pedicle is no thicker than the rest, but it is green; the rest is of an orange colour. On the head of the pedicle there first appears a long, slender, and pointed pellicle, covering

vering the embryo capsule; as this grows in magnitude, the calyptra appears more thick, and at length splits. The whole is made up of woolly fibres, without any membrane; when this is taken off, the capsules are found to be square, large, and of a brownish colour; they are filled with a greenish, or yellowish powder.

Among the plants which produce these capsules, there are others with their extremities, radiated in form of a star. Boerhaave first suspected these starry tops to be flowers; and Micheli adopted the opinion, from whom Linnaeus has taken it to distinguish the genus by; but all, that we see produced from these starry tops, is no more than young plants like the former, growing as it were out of the head of the old one; they are sometimes seen proliferous in this manner, to the third and fourth degree.

This species grows very abundantly in our woods, and on heaths. Most of the botanical writers have described it under the name of *Polytrichum aureum majus*, and *Mucus aureus capillaris major*. Linnaeus, in his *Flora Laponica*, calls it, *Polytrichum caule simplici*. Micheli has been so fond of the opinion of the starry tops being flowers, that he has figured them something more like flowers than nature makes them. In very favourable soils, this plant will grow to a vast length.

2. *Polytrichum ramosum capsula rotunda.*
Branched Polytrichum, with roundish heads.

The squareness of the capsules has been by some made the great distinguishing character of the *Polytricha*; but this species is a perfect *Polytrichum* in it's external form, as well as it's characters, yet it's capsule is round. It grows to two or three inches in height. It's roots are fibrous and tough; it's stalk is rigid and firm; it has few leaves, often none toward the bottom; but in the upper part it is very thick set with them. The stalk generally divides into three or four branches, at about half way of it's height; these are about an inch long. The leaves are oblong, narrow, hollowed, and pointed at the ends. The pedicles arise from the summits of these branches, and are very slender, about three quarters of an inch long, and of a yellowish colour. They are often somewhat crooked: on the tops of these stand capsules of a roundish, or, more properly, of an elliptic figure, being more protuberant on one part than in the rest. The calyptra is of a yellow colour, short and thick, but pointed at the top, and jagged or lacerated as it were at the bottom. The capsules are green at first, but afterwards brown, and at length almost blackish. It's leaves, when examined by the microscope, are found to be lightly serrated. It grows very plentifully on the Alps, and is found in some parts of England. The mountains of Wales are said, in some places, to abound with it. I have met with it on Mendip-hills.

3. *Polytrichum capsulis rotundis sessilibus.*
The round-headed Polytrichum, with short pedicles,

This is a very singular plant, and would, at first sight, be taken for a Moss of almost any other kind, rather than a *Polytrichum*. It grows to about an inch and half in height; it's stalks are divided into several ramifications, and are all over thick beset with short and broad leaves. They are broadest at the base, and terminate in a point which bends downward, and are pellucid, and of a pale green colour. The tops of the branches are thicker than any other part, and their leaves are often disposed in a stellar form. The pedicles which sustain the capsules are extremely short, and do not grow from the middle of these, but from the bases of the other leaves, and also from the bases of those on the stalks. The capsules are of an oval figure, and are covered with a calyptra, short and pointed, and very hairy, the hairs standing erect, not lying down lengthwise, as in most of the other species.

It is common on the barks of old trees, and also on old walls; sometimes on pales, and the sides of houses. Many of the botanical writers have described it, but few of them have discovered that it belonged to this genus. Ray calls it, *Mucus apocarpus arboribus adnascens minor*. Tournefort, *Mucus capillaceus, minimus, acaulis, calyptra striata*; and Morison, *Mucus humilis tectorum, subfuscus, capitulis brevibus, pileolis erectis pediculis curtis*. Vaillant has figured it, but not accurately.

The other species of *Polytrichum* are, 1. The lesser, square-headed, heath *Polytrichum*. 2. The least hairy *Polytrichum*, with square heads. 3. The branched,

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urn-headed *Polytrichum*. 4. The dwarf, aloe-leaved, round-headed *Polytrichum*. 5. The dwarf, long-beaded, aloe-leaved *Polytrichum*. 6. The large, short-pediced *Polytrichum*. 7. The short-pediced *Polytrichum*, with strait, hollowed leaves. 8. The fine-leaved, curled *Polytrichum*, with sharp, hairy calyptrae. 9. The dwarf, fine-leaved *Polytrichum*, with cylindric heads. These are all the really distinct species hitherto known.

The first species, or great *Polytrichum*, is the only kind that has the honour of standing recorded as a medicine: The opinion of it's having a virtue to make the hair grow thick has been of very long standing, though founded, perhaps, on no better a reason than it's pedicles looking like hair. Tournefort tells us, that it is a very powerful sudorific, and that great cures have been done by it in pleuritis. It is not in use in medicine with us, but we have another use of it. It's roots in boggy ground penetrate very deep, and they make in Sussia a kind of brooms of them.

M O S S E S.

Class the Fifth. Genus the Third.

S P H A G N U M.

SPHAGNUM is a genus of Mosses, consisting of stalks furnished with leaves, and of capsules, in some respects resembling those of the bryum, but without any calyptrae, and standing on so short pedicles, that they do not appear to have any. The pedicles, which support the capsules, grow, in many of the species, from the summits of the stalks, but not in all. Linnæus supposes it to be so in all, and makes it a part of the generical character; but there are genuine *Sphagna*, or Mosses, with no calyptrae to their capsules, which yet produce them from the sides of the branches. The species of this genus differ very considerably among one another: some of them are very large, others very minute; some branched, others simple.

1. *Sphagnum molle foliis cavis.*

Hollow-leaved, soft Sphagnum.

This is the largest of all the family of the *Sphagnums*, and, indeed, is one of the largest of the Mosses in general. It grows to eight, ten, or twelve inches in height. It's stalks are indeed too weak to support themselves singly to such a height, but they always grow in clusters, and so stand tolerably well upright. They are usually single and undivided, but sometimes they divaricate near the top into two; all the way up these stalks there grow short branches, three or four together: these are about half an inch long each, and droop considerably downwards. They are thickest near the base, and smaller to the point; they are thick covered with short leaves, oval, broad at the base, and hollow; they are of a white, or reddish colour, and are placed one over another in the manner of scales. At the top of the plant there stand a great number of the same kind of little branches; they are shorter than the rest, and stand erect, and are placed together in such numbers, that they make a thick and large button at the top of the stalk. The leaves on these are shorter than on the others, and broader at the point. These heads are often redder than the rest of the plant, and sometimes greenish. From the thick top of the plant there arise, in the month of July, capsules; they are round, of a brownish colour, succulent, and in some degree resemble berries, but, when ripe, they shed a fine yellow powder: there do not appear to be any pedicles to these at first, but, as they grow larger, there are seen to be short and slender stalks to support them. These capsules have no calyptra; and another thing in which they differ from those of the other Mosses is, that they remain but a very little while on the plant. They are but a little time in ripening; and in a very little while after they fall off, and may be found scattered about upon the plant, with two holes in each; one in the summit, the other made by the pedicle. While recent, it retains so much moisture, that it is very heavy; but, when dried, it is as remarkably light; it is always very soft to the touch.

It grows very abundantly with us on heaths, and in bogs. The plant is frequently met with in immense clusters, but its capsules are rarely seen. It is common on the bogs on Hampstead-heath.

Many of the botanical writers have described it. Gerard calls it by a very odd name, *Muscus terrestris vulgaris*, a name given by most people else to one of the hypnum. Dodonæus, whom he copies, calls it by the same name; and Parkinson also, *Muscus terrestris vulgarissimus*. Ray calls it, *Muscus palustris terrestris similis*. Linnaeus calls it, *Sphagnum ramis reflexis*; and tells us, that in Lapland they make childrens beds of it. Lobel gave the first figure of it. Dodonæus, Johnson, and Parkinson have copied it. Plukenet's figure is made from a dried specimen, and Vaillant's is rather a pompous than a good one. Dillenius's is far the best extant.

2. *Sphagnum acaulum foliis capillaceis.*

The acaulous Sphagnum, with capillaceous leaves.

This is a species so extremely different, in its size and appearance, from the former, that it is scarce possible to conceive, at first sight, that they are of the same family; as that is the tallest, this is one of the lowest Mosses that we know of, and it wants every character of singularity in the manner of growth of the former; rather looking like one of the bryums. Its beads, however, when they appear, easily distinguish it, at sight. It seldom grows to more than half an inch in height, often it is much less. Its stalks are very slender also, and its leaves so small, and so narrow, that they add but little to their thickness. The stalk is usually single, but, as in the large one, it sometimes divides into two or three ramifications. The leaves are short, and of the fineness of a hair; they are of a pale green colour, and those on the upper parts of the stalk are somewhat longer than the others. In April the capsules appear; they are round, of a greenish colour, and have no pedicles; they grow brown afterwards, and, finally, reddish. They remain on the whole summer, and are quite naked, or without calyptræ.

The plant is common with us on heaths, and by way-sides, but it loves a little moisture. Many of the botanical writers have described it. Petiver calls it, *Muscus acaulos trichoides minor*; and Vaillant has given a figure of it.

3. *Sphagnum pennatum planum.*

Plane, pennated Sphagnum.

This is an extremely elegant species, and is very different, in its general figure, both from the large and the small species already described. The stalks of this grow to three or four inches in length, and divaricate into two or three parts, each sending out also several short side branches. All these, as well as the main stalk, are furnished with a double row of roundish leaves on each side, standing opposite to one another, and giving the plant somewhat of the appearance of a flat hypnum, but more stiff of a lichenastrum. These leaves are very thin, pellucid, and of a bright green colour. From the base of them, at different distances along the stalks, there arise certain little protuberances, formed of small, squammous leaves, of a different figure and consistence from the others; and from the summits of these there grow little capsules, with no calyptræ; they are of a pale yellow colour, and full of a fine yellowish powder. When examined in their places of growth, they appear to have no pedicles; but when the clusters of little leaves, on the summits of which they stand, are opened, there appear short pedicles, which before were buried in these clusters.

It is not a native of England, nor is yet known to be produced any where but in South America; it grows there very abundantly on the barks of old trees.

The species of *Sphagnum*, beside those here described, are, 1. A soft bog-kind, with fine leaves. 2. The bright, green-pointed *Sphagnum*, with oval beads. 3. The rough *Sphagnum*, with red heads. 4. The hoary, nodose *Sphagnum*. 5. The *Sphagnum*, with numerous heads all leaning one way. 6. The undulated, branched, and pennated *Sphagnum*, with hairy heads. 7. The undulated, pennated *Sphagnum*, with plumose heads. 8. The dwarf, bulbous *Sphagnum*. 9. The short and dwarf bulbous *Sphagnum*. 10. The large, bulbous *Sphagnum*, with bristles. 11. The transparent, fine, grass-leaved *Sphagnum*. 12. The creeping *Sphagnum*, with very small heads.

M O S S E S.

Class the Fifth. Genus the Fourth.

M N I U M.

MNIUM is a genus of Mosses, consisting of stalks furnished with leaves, and producing capsules on pedicles rising from them, like those of the other Mosses of this class; and, beside these, on other pedicles, bearing a kind of naked heads of a dusty surface, and having no calyptra.

These two kinds of heads are, in some species, produced on the same plant; in others on different plants, of the same species.

The pedicles which support the membranaceous heads, or capsules, are long and naked; those which bear the dusty heads are short, and are in some of the species naked also, but in others they are furnished with little leaves. These dusty heads, when examined with a good microscope, are found to consist of congeries of green, foliaceous membranes, expanded in form of roses.

1. *Mnium foliis brevibus carinatis.**The short and hollow-leaved Mnium.*

This is a very small species, and, when in any but its flowering state, is easily mistaken for one of the little bryums. It grows usually to about half an inch in height, sometimes not so much; and sometimes, in very favourable soils, to an inch. Many of the plants usually grow together, so as to form a large tuft, and that of a pleasant, green colour, and very pretty appearance. The stalks are often simple, sometimes divided into three or four branches; they stand erect, and the leaves are set less thick on them, than on the generality of the Mosses: they are short and sharp-pointed, and of a pale green. In March there arise, from the summits of some of the branches, short and naked pedicles, which support each a head of the dusty kind; these heads are round, of the size of a moderate pin's head, and of a green colour. They soon come to their maturity, and soon decay. From the summits of the other branches there arise about the same time longer pedicles, of a yellowish colour, which support heads of the capsular kind, perfectly resembling those of the bryums; they are oblong, and have their calyptrae like those of the other Mosses, but white at the bottom, and brown at top. These heads are much longer in coming to maturity, than the other heads, and remain a great while longer on the plant.

The dusty heads are very frequent on this plant, but the capsular ones are met with but rarely. The plant is common with us on ditch-banks, and on heaths: where it has a great deal of moisture it grows much larger than in dry places. Tournefort calls it, *Muscus capillaceus minimus, capitulo minimo pulverulento*; and Micheli from Ray, *Muscus trichoides parvus, capitulo conglomerato seu botryoide*. Haller calls it, *Bryum alternans calyptra variegata scyphulis foliosis*. Buxbaum censures Morison's figure, but his own, which he gives in the place of it, is worse. Vaillant has not figured the capsular heads at all, nor have many others who have figured the plant.

2. *Mnium capitulis numerosis.**Many-headed Mnium.*

This is a taller and more robust plant than the former; it grows to two inches in height, and its stalk is frequently quite simple; sometimes it sends out a few branches, but, when it does, these are always short and inconsiderable. The leaves stand much thicker about the upper part of the plant, than about the lower. They are oblong, narrow, of a dusky green colour, and pointed at the end; the pedicles, which support the dusty, naked heads, are short; they proceed from the axils of the leaves, and stand very thick; it is common to meet with thirty or forty upon a single plant. These pedicles are short, and are not naked, but have a kind of little, membranaceous leaves, standing pretty close upon them. The heads are small and round,

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not exceeding a small pin's head in size; they last but a little time on the plant, and no other heads have as yet been observed upon it.

Dillenius found this Moss dried among Mr Sheppard's papers; and in Buddle's Hortus Siccus, under the names of *Muscus alter botryoides elatior*, and *Muscus pulverulentis forsitani variis capitulis*. I have met with it growing in some damp places on the side of Rook's Hill near Goodwood, the seat of the late great patron of botany, of all the sciences, and of all who studied them.

3. *Mnium repens pennatum*.
The pennated, creeping *Mnium*.

This is a species so extremely different from the two others, that, at first sight, one would scarce imagine it could belong to the same genus. It rather resembles a lichenastrum, or some other Moss of that kind. It never rises at all from the ground, but creeps upon it, sending down fibrous roots from every part. It grows to two inches in length, and generally sends out three or four small ramifications. The main stalk is furnished with a double row of thin and somewhat broad membranaceous leaves, very pellucid, and of a glossy surface. These are so regularly placed, that they give it a pennated look, and are smaller toward the base of the stalk, than in the middle of it, and from thence grow smaller again toward the end; the branches have the same sort of leaves, and disposed in the same manner, except that theirs are largest at the base of the branch, and gradually smaller all the way up: the leaves on these also are narrower, in proportion to their length, than the others. From the summits of these branches there grow little, round, naked, and dusty heads; they are of a green colour, and stand on short pedicles: they last but a little time, and their pedicles fall off with them, so that the plant is usually found without them. No other kind of heads have yet been observed in this species, though frequently met with. It grows much about London, in Cane-wood and on Hampstead-heath; but it has not been described by any author, except Dillenius, who acknowledges, that he met with the first mention of it in some manuscript notes of Mr Doody's.

Haller is for referring the species of this genus to the bryums; and most of the authors, who have written about them, determine the capsular heads to be the male part of the fructification, the dusty ones the female; but the frequency of the latter, and the scarcity of the former, plead much against it, and their time of appearance more so: when both are found on the same plant, the dusty ones are generally decayed, and fallen off, long before the capsular ones have arrived at their maturity.

The species of *Mnium*, beside those here described, are, 1. The transparent, serpyllum-leaved *Mnium*. 2. The larger, upright, and forked bog *Mnium*. 3. The transparent, trichomanes-like *Mnium*, with divided leaves. 4. The lichen-leaved *Mnium*, improperly made a new genus by Micheli and Linnaeus, under the name of *Blasia*; and 5. The short, irregularly-branched *Mnium*.

M O S S E S.

Class the Fifth. Genus the Fifth.

FONTINALIS.

FONTINALIS is a genus of Mosses, consisting of branches furnished with leaves, and producing also capsules of the membranaceous kind, covered with calyptrae, but having no pedicles, or very short ones: they are inclosed in a sort of vagina, or cup, of a squammosus structure, and produced in the axæ of the leaves.

The Fontinalis are but few in number, and are very regular and similar one to another in their manner of growing. There are only five known species, and they are all of the ramose kind.

1. *Fontinalis foliis latioribus*.
Broad-leaved *Fontinalis*.

This is a very large Moss, and very conspicuous in it's manner of growing. It is usually affixed to some solid matter, in or at the side of the water, and floats at length from

from that. It grows to five or six inches in length; its stalk is brown, or blackish, very firm and strong, and divaricates usually into six or eight ramifications. The leaves are oblong, broad, and of a fine green colour, smooth and glossy, and considerably pellucid. They do not stand so thick as the leaves of many the Mosses do: they are small toward the bottom of the stalks, largest in the middle, and small again toward the extremity, where they sometimes also are convoluted so as to form a kind of point. They are broadest at the base, and, from thence, grow smaller gradually to the point, and are placed in such order, that they give the plant a kind of triangular figure. The capsules grow from the middle to the lower part of the branches; there arise from the axis of the leaves, in this part, a kind of membranaceous vagina, or cups, of an oval figure, open at the upper part; and, from this opening, there appears the top of a membranaceous capsule, like those of the other Mosses, covered with its calyptra: within the vagina, there is contained an oblong capsule, wholly like those, its aperture being furrowed, as in the other, with a number of pyramidal bodies, visible, when the calyptra is taken off. These capsules stand on extremely short pedicles, they appear to have none at all. There are a few membranaceous leaves at their base; and the whole vagina, when examined, is found also to be composed of such membranes, laid over one another, like scales, in so nice a manner, that the whole seems to constitute only one membrane. This species is very common in brooks and rivers about London, and elsewhere; in standing waters it is sometimes rooted in the mud; in running ones it always affixes itself to wood, or to some other solid substance.

Most of the botanical writers have described this species; C. Bauhine calls it, *Muscus aquaticus folio expanso*; Ray, *Muscus aquaticus triangularis*; Læfelius, *Muscus aquaticus denticulatus*; and Dillenius, in his *Catalogus Giffenſis, Selago aquatica, foliis pellucidis, triangularibus, acutis, complicatis cincta*; but, in his succeeding edition of Ray's *Synopsis*, and in his *Historia Muscorum*, he distinguishes it for a *Fontinalis*.

2. *Fontinalis foliis lanceolatis.*

The Fontinalis, with lanceolated leaves.

This is a smaller species than the former. From the same root it usually sends up a great number of small and slender stalks; they are of a brownish dusky colour, and very tough and strong. They grow to three or four inches in length, and are sometimes single, sometimes divided into two or three branches. The leaves do not stand so thick as in many of the other Mosses; they are small, narrow, and obtusely pointed, and stand in two rows, one opposite to the other. They are of a pale yellowish, green colour, as is also that part of the stalk which is near the summit. From the axis of the leaves there arise very short pedicles, which support oblong capsules, with their calyptrae on the summit, and with a tender membranaceous vagina, or cup, at the base, which falls to pieces very easily.

It is an American Moss, and not known any where there but in the hotter countries. Plumier has described it under the name of *Muscus linariae foliis acutissimis*. It grows up out of the mud, in the bottom of standing shallow waters.

3. *Fontinalis foliis capillaceis.*

Capillary-leaved Fontinalis.

This is a very beautiful species. It grows to six or eight inches in length, and sends out a number of branches, which are usually single, but sometimes divided into two or three ramifications. The leaves stand very close and thick; they are oblong, extremely narrow, and hollowed toward the base, and are of a dusky green in the young branches, and of a blackish hue on the larger stalks. From the axis of the leaves, and particularly about the origin of the ramifications, there grow a peculiar kind of vagina, composed of membranaceous leaves, folded together, and, at first, terminating in a sharp point. These vaginae are remarkably long, and, after they have appeared some time, they open at the point, and there appear capsules of a roundish figure, like those of the other Mosses of this class. There is no apparent pedicle to these capsules, but, when the vagina is opened, a pedicle is found running down its whole length. The whole plant has much the appearance of a hypnum, but its singular vagina sufficiently declare it to be a *Fontinalis*.

It grows in standing waters, sometimes in rivulets, and is very common in North America. Dillenius is the only author who has described it; he received specimens of it

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it from Pennsylvania, gathered there by John Bartram, at the same time that mine and those of all the other botanical people who have it were sent over.

There are only two species of *Fontinalis* known, beside those here described: these are, 1. The smaller, triangular-leaved *Fontinalis*, with capsules at the summits of the branches. 2. The fine-leaved, blackish, glossy *Fontinalis*.

M O S S E S.

Class the Fifth. Genus the Sixth.

HYPNUM.

HYPNUM is a genus of Mosses, consisting of stalks and leaves, and producing membranaceous capsules, like those of the rest of this class: these capsules stand on pedicles, which grow from the aze of the leaves, and have, at their base, a kind of squammos covering, formed of a matter quite different from the leaves of the plant. The capsules of the *Hypnum* all have their calyptræ: they are of different shapes, but usually oblong, and the pedicles on which they stand are usually long also. The squammos involucre, at the base of the pedicle, is called by Dillenius *perichætiæ*, and is the great characteristic of the *Hypna*, no Mosses of any other genus having it in this form. The *Hypnum* is a very large genus; Dillenius has described no less than seventy-six species of it: some of these, however, are but varieties of the same plant, under different states. The *Hypna*, in general, are large Mosses, and are branched; some of them, however, want this obvious character, as some of the *bryums* also are branched, and, at first sight, resemble the *Hypnum*s.

1. *Hypnum ramosum foliis triangularibus minoribus.* *Branched Hypnum, with small, triangular leaves.*

This is the Moss properly called *Muscus terrestris vulgarissimus*. It is by much the most common of all the Mosses. Some authors have distinguished it by this name, but most others have called other Mosses, neither common, or of the land kind, by it, as the great *Sphagnum*, &c. The stalks of this Moss grow to six or eight inches in length; they usually divaricate into several ramifications, and each of these sends out, also, other branches, which are simple, and of half an inch, or more, in length. The whole plant is covered with short and small leaves, very thick set, and falling like scales over one another: they are of a triangular figure, broad at the base, and terminate in a point. They are of a pale yellowish-green colour, and of a shining surface. From the aze of the leaves there rise pedicles of two inches in length, slender, glossy, and of a reddish brown colour; these sustain capsules of an oblong figure, and these are covered with a calyptra, and contain a fine greenish-yellow powder.

It is extremely common on barren ground, and under hedges, but the capsules are not frequent on it; ten thousand clusters of the plant may be examined, before there are any of them found.

Most of the botanical writers have described this species. Ray calls it, *Muscus terrestris latioribus foliis*, five vulgaris; and Tournefort, *Muscus squammosus ramosus*.

2. *Hypnum erectum rigidum, capsulis cernuis.* *The rigid, erect Hypnum, with cernuous beads.*

This is an extremely different plant from the former in it's general figure; as that is procumbent and weak, this stands erect, and it's stalks are firm and rigid. It rises to three or four inches in height; it's stalks are of a blackish colour, and are almost naked for one half of their height, having in this lower part only a few yellowish membranes, here and there upon them; from this part they begin to send off branches, which, in the whole, are very numerous; and these again send off others, so that the whole plant much resembles a tree, whose trunk is naked, but it's head very full of boughs. All these branches, as well as the main stalk of the plant from this height, are thick covered with leaves, broad at the base, and terminating in a point; they are short, and of a dark green colour. The root is creeping, and sends up a number of

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these

these plants, one near another. The pedicles, which sustain the capsules, are about three quarters of an inch long, of a reddish colour, and the capsules short and tumid; they do not stand erect, but lean a little.

This beautiful little *Hypnum* is common in woods, about the roots of old trees; Charlton-wood, near Woolwich, abounds with it. The botanical writers in general have described it. Tournefort calls it, *Muscus squammosus, dendroides, radice repente*; and Pontedera, *Muscus squammosus, dendroides, ramosus, squammis hinc inde eleganter dispositis*. The *Muscus aquaticus pennatus frutescens* of Morison is also a variety of this species, though very ill figured.

3. *Hypnum filicinum cristatum.* *Fern-leaved, crested Hypnum.*

This is an extremely elegant little plant: it grows, at the utmost, to about an inch and half in length. It consists of a single stalk, strait, slender, and curled at the extremity, which sends off, on each side, a series of branches, of about a third of an inch in length in the middle, and growing gradually shorter as they approach the end; the extremities of these branches are curled back, in the same manner as those of the main stalk, and both that, and these, are covered with leaves, standing very thick upon them. These are small, and of an oblong figure, pointed at the end, and crooked, in the same manner as the stalk: they are of a yellowish colour, and the bending of these, and curling of all the branches, gives the plant a very beautiful, crested appearance. From the base of the leaves, in several parts, there arise pedicles, sustaining capsules; the pedicles are about half an inch long, and the capsules are short and tumid, of an oval figure, and brown colour. The regular disposition of it's branches gives it much the appearance of a fern, and the curling maket it resemble the crest of a helmet.

It is not uncommon with us, on heaths, and about the stumps of trees, and the bottoms of old walls: it is also frequent in other parts of Europe, and in North America. Bobart first found it in England, and called it, *Muscus terrestris, repens, subulvus, foliis crispis, minoribus ramulique dense confertis*. Boerhaave calls it, *Muscus repens, ramosus, pennatus, subtilissime divisus, foliis crispis reflexis*.

4. *Hypnum pennatum basi capsuliferum.* *Pennated Hypnum, producing it's capsules from the base of the leaves.*

This is one of the smallest of the *Hypnums*, and has so little the appearance of the rest of the genus, that nothing but an examination of the fructification of it could distinguish it's belonging to it. It consists of a single leaf, of about half an inch in length, and of a pennated form, consisting of a double row of pinnule, about eight or ten in each row; but these not separate, and affixed to a rib, but formed only of divisions, or segments, of one common leaf: there are usually five or six of these leaves growing from one root. They are of a deep green colour, and glossy surface, and are somewhat pellucid. From the base of each of these leaves there arises a single pedicle, about half an inch in height, and of a brownish colour, covered with a membranous perichætium at the root, and sustaining, at it's top, a small, oblong, and tumid capsule, not standing erect, but leaning a little, but covered with a calyptra, the point of which turns upwards; the capsules are green, at first, but brown, when ripe. The leaves have each a slender rib running all along it, and are sometimes broader, sometimes narrower, but a seventh of an inch is about their usual breadth. Many of the botanical writers have described this Moss, but they have thought of very different titles to express the shape of it's leaves by. Ray calls it, *Muscus filicifolius, seu pennatus minor*; and Dillenius, *Hypnum taxiforme*. Vaillant calls it, *Muscus pennatus capitulis adianti*; and Clayton, in Gronovius's *Flora Virginica*, *Lichenastrum foliis erectis, pinnatis, saturate viridibus*. It grows very abundantly in our woods, and on heaths, especially where there is a moist soil.

The other more singular species of *Hypnum* are, 1. The transparent, bird's-foot-leaved *Hypnum*. 2. The large, shining, membranaceous, water *Hypnum*. 3. The large, shining, firm *Hypnum*, with tamarisk leaves. 4. The curled, fern *Hypnum*. 5. The undulated, pennated *Hypnum*, with short pedicles. 6. The great, scorpion, creeping, bog *Hypnum*. 7. The lesser, upright, scorpion, bog *Hypnum*. 8. The great, triangular-leaved, upright *Hypnum*. 9. The long, sharp-leaved,

leaved, floating Hypnum. 10. The blunt, cypress-like Hypnum. 11. The finer, cypress-leaved Hypnum. 12. The long, pedicled, shrub Hypnum, with erect heads. 13. The slender, silky Hypnum, with pointed heads. 14. The black, water Hypnum, with hooked leaves. 15. The round, branched, dark green Hypnum. 16. The square-branched Hypnum. 17. The smallest, fern Hypnum, with tamassik leaves. 18. The fine, float Hypnum, with small heads. 19. The small, creeping, club Hypnum, with short pedicles. 20. The short-stemmed, mouse-tail Hypnum.

M O S S E S.

Class the Sixth.

Such as produce capsules without pedicles, and without calyptrae.

Genus the First.

LYCOPODIUM.

LYCOPODIUM is a genus of Mosses, consisting of branches, furnished with leaves, and producing spikes, formed of squammæ, of a different figure from the leaves; at the bases of which there are placed capsules, of a kidney-like shape, which have no cup, or vagina, and, when ripe, open longitudinally into two parts, and discharge a great quantity of fine powder; and having no other visible seed.

The Lycopodia have all one general appearance, by which they may be distinguished to belong to the same family; but some of them have their spikes supported on peculiar pedicles, some have them continuous to the rest of the stalk. The species of this singular genus are not very numerous, but they are, in general, very beautiful.

1. *Lycopodium repens angustifolium hirsutum.*

Creeping, narrow-leaved, hairy Lycopodium.

This is the most frequent species of Lycopodium with us, and is known by the name of the Common Lycopodium, or Wolf's-Claw Moss.

It does not grow erect, but creeps flat upon the ground, extending it's branches to a great length, and divaricating a great many ways; pieces of a yard, or more, in length, may be taken up, if raised carefully, without breaking: these ramifications all send out numerous roots, as they creep along the ground, and are very thick beset with leaves; these are narrow, oblong, and terminate each in a long white hair. They are of a pale green colour, and bend a little backwards. The branches are produced from the main stalk, in an alternate order, and the extremities of the branches are thicker, and, from the base of the leaves, near their insertions, arise the spikes, which are rough, and more hairy than any other part; it is these thick ends of the plant that have given occasion to it's name of Wolf's Claw Moss, not the spikes from the tops of the branches. The spikes have no pedicles at first, but, before they arrive at their maturity, they are raised from the plant by pedicles of two inches, or more, in height. These are sometimes ramose, but usually single. The squammæ which form the spikes are broad at the base, and terminate in a fine white hair; the spikes are about an inch long, and a sixth of an inch, or more, in diameter; the capsules are large, and shaped like a kidney, and are lodged in the base of the squammæ of the spike. It is a common Moss in many parts of England; the heaths in Sussex afford it abundantly; it used also to grow on Hampstead-heath, but it is lost there now. Most of the botanical writers have described it under the names of *Lycopodium vulgare*, and *Chamaepuce*: some have called it, *Muscus terrestris clavatus*, and others, *Cingularia*.

2. *Lycopodium digitatum spicis quadruplicibus.*

Digitated Lycopodium, with four-fold spikes.

This is an extremely singular and elegant Moss. It grows to a foot, or more, in length, and is erect, not procumbent, as the common kind. It's radical stalk creeps on the surface

surface of the earth, and sends down a multitude of fibres; from this there rise, at an inch or two distance, stalks of six or eight inches high; they are roundish, and are covered with small leaves, or squamous membranes. These send out, on every side, a kind of digitated branches, an inch or two in length, and extending as much in diameter. They issue single from the stalk, but they divaricate into six or eight ramifications, which, dividing again each into two at the extremity, form, in the whole, a very elegant closter; these ramifications are thin and flattish, but somewhat convex on the upper side, and concave on the under. They are of a yellowish-green colour, and, in some degree, resemble the leaves of the arbor vitæ; they are very tough and firm, and each is composed of a middle rib, thus divaricated, and covered with small leaves, broad at the base, and narrower to the point, pressed closely down upon it. From the upper parts of the plant arise pedicles of three, four, or more inches long, each divided into two branches at the summit, and each of these branches divided into two again; at the top of each of these last ramifications there grows a spike, slenderer than that of the common Lycopodium. The pedicles have a few squamous leaves on them, and the spikes are composed of squamæ broad at the base, short, and terminating in a point; in the axis of these are placed capsules, of a kidney-like shape, filled with a fine yellow powder.

It is a native of North America: Pennsylvania and Virginia produce it in abundance: it produces it's spikes in August and September.

The other species of Lycopodium are, 1. The savin-like Lycopodium, called Cypress Moss, and the Heath Cypress. 2. The tall, double-forked Lycopodium of the East-Indies. 3. The great, slender, spiked, East-Indian Lycopodium: this grows to three feet in height. 4. The small, creeping Lycopodium, with single spikes, and extremely long pedicles. 5. The short, creeping Lycopodium, with single, upright spikes. 6. The fox-tail Lycopodium, sending roots from it's branches. 7. The juniper-leaved Lycopodium, with no pedicles to the spikes. 8. The fine-leaved, curled, shrub Lycopodium, with short, drooping clubs, or spikes: and, 9. The sharp, square-spiked, hoary Lycopodium: both these last also have spikes without any pedicles.

M O S S E S.

Class the Sixth. Genus the Second.

TRISPERMIUM.

TRISPERMIUM is a genus of Mosses, consisting of stalks, furnished with leaves, disposed in three regular series; two series or rows of larger and broader placed opposite to one another, in the same plane, on the two sides of the stalk; and a third series of smaller leaves covering the upper part of the stalk, or rib, between the other two; and producing spikes, sometimes with, sometimes without pedicles; which spikes contain capsules of two kinds, those of the one kind holding only a powder, and those of the other containing each three seeds. The spikes of these Mosses are less different from the rest of the plant in their structure than those of the lycopodium, and in many of the species, after a certain period, become undistinguishable from the stalks on which they grow. Dillenius has called this genus, from the resemblance it's spikes bear to those of the lycopodium, Lycopodioides. It seems properer to distinguish them by a name which expresses the great singularity of it's producing seeds, three in a capsule.

1. *Trispermium spicis brevibus sessilibus.* *The short-spiked Trispermium, without pedicles.*

This is a creeping Moss; it's branches lie flat upon the ground, and extend themselves to five, six, or more inches in length, and to as much in breadth; they send out numerous ramifications, and these subdivide themselves again into smaller. They send out roots in several places, and are ornamented on each side with a row of broad and obtusely-pointed leaves, and with a row of somewhat shorter and smaller between them. The spikes are short and small; they grow from the extremities of the

the young branches, without any pedicles, and generally grow two from the same base. They are clothed with squammæ, much resembling the leaves of the plant in shape, and, at the bases of these, there stand capsules of a roundish figure, bivalve, and containing a fine powder: beside these, there are also other capsules, not only placed in the axæ of the other squammæ of the spike, but also in the axæ of the leaves of the plant; these are small, and scarce visible, at first; but, in fine, they increase to a considerable size, and each contains three round and tolerably large seeds. As these increase in size, they thrust out the leaves from the stalk, and, the squammæ of the spikes, at the same time, growing larger, the spikes themselves become undistinguishable from the branches of the plant.

It is a very scarce plant: it has been talked of as growing in England, but it does not appear that there ever was any better foundation for this opinion than people's mistaking some other plant for it. Clusius received it from Portugal, and figured it: almost all the late authors have copied his figure, and know no more of the plant than what they collect from him. Dr Shaw, indeed, found it in the East, and it has since been discovered in South America. It grows in moist, stony places. Most of the old authors have described it under the name of *Muscus denticulatus*, and *Muscus terrestris Lofitanicus*. Ray calls it, *Muscus denticulatus minor*; and Buxbaum, *Lycopodium parvum, herniariæ foliis*; he has a good figure of it, but erroneously calls it a new-discovered plant. Lobel says it grows on Mendip-hills; and Merret, in Lancashire; but no body ever found it in either of those places.

2. *Trispermium spicis longioribus pediculatis.*

The Trispermium, with long spikes on pedicles.

This is a very elegant Moss, of the creeping kind. Its branches lie close upon the ground, and are divaricated every way into a number of ramifications, which often divide again into still smaller; every branch has three series of leaves on it; two of larger, placed opposite to one another, and a third of smaller, covering the rib between them. They are broad at the base, and have no pedicles, and are placed rather alternately, than exactly over against one another. The middle series of leaves is, as it were, double, one small leaf growing at the base of every larger one. These are narrower, as well as shorter, than the others, and are smooth; the others are a little curled, or crooked. From several parts of the branches there arise pedicles of an inch long, each sustaining sometimes a single spike, sometimes two, sometimes three, of the same length with their pedicles, and somewhat thicker, but not much so; these are composed of oblong squammæ, convex on one side, and concave on the other, and of a yellowish colour. At the bases of these there are affixed bivalve capsules, containing a fine powder, and, on the branches themselves, as well as at the bases of the lower squammæ of the spike, there are also other capsules of an oval figure, each containing three small seeds: these latter capsules are much smaller than the others, and are much less frequently found on the plant.

It is found on the Alps, and in many parts of Switzerland. It has been said to be a native of England, but we do not find it here at present, and, probably, those, who mention it's being found with us, took some other species for it. Ray describes it under the name of *Muscus denticulatus major*; and Tournefort and most of the other botanical writers call it by the same name; but some call it, *Denticulatus minor*; and many have wrongly asserted, that it is the same species with the former: the difference of the spikes sufficiently proves the contrary.

3. *Trispermium erectum spicis triangularibus.*

Erect Trispermium, with triangular spikes.

This is a species of *Trispermium* extremely different, in it's general figure, from the foregoing kinds: it is an erect, robust, and large plant. It grows to a foot, or more, in height; it's stalk is very tough and firm, and carried up single for about four inches, during which space it is covered with a few scattering squammæ. From this height it begins to send out branches in great numbers, which ramify again, and form, upon the whole, a plant with much of the external appearance of a fern. The branches all have, on each side, a row of leaves, short, and moderately broad, rigid to the touch, of a smooth surface, and of a beautiful green colour; and, between these two rows,

is another series of smaller leaves, covering the upper side of the stalk, but the opposite side is bare.

The extremities of the branches in this species are terminated by short spikes, of a square figure, and without pedicles. These spikes are slender, and are composed of small squammæ, hollow, broad at the base, and terminating in a point. At the bases of these squammæ there stand capsules, which are bivalve, and are some of them filled with only a fine powder; others of them contain three white roundish seeds each: one of these capsules stands at the base of every squamma, where there is not one of the others.

This species is of American origin, and has not been met with any where in Europe. Petiver and Ray describe it under the name of *Muscus denticulatus major Caledonicus*, perelegans, filicis in modum pinnatus. Plukenet calls it, *Muscus squammosus erectus*; and Dillenius, *Lycopodioides dentatum, erectum, filicinum, caule tereti ramosissimo*.

The other species of the *Trispermium*, described by authors, are, 1. The creeping, denticulated *Trispermium*, with footless spikes. 2. The shrubby *Trispermium*, with loose and naked spikes. 3. The upright, acacia-leaved *Trispermium*. 4. The small, erect *Trispermium*, with fern-like leaves. 5. The spleenwort-leaved *Trispermium*. 6. The furcated, yew-leaved *Trispermium*. 7. The smaller, stiff *Trispermium*, with denticulated leaves. 8. The scaly *Trispermium*, with curled points. 9. The spreading, forked *Trispermium*. These are most of them of American origin.

M O S S E S.

Class the Sixth. Genus the Eighth.

SELAGO.

SELAGO is a genus of Mosses, consisting of branches furnished with leaves, and producing capsules in the axils of the leaves, which have no pedicle, nor any calyptra, but are formed of two valves, and have a single cavity in them, containing a fine yellowish powder.

The several species of *Selago* are all robust and shrubby plants, in respect of the other Mosses, and their branches are generally divided dichotomously.

1. *Selago erecta longifolia.* *Long-leaved, upright Selago.*

This is a robust plant, it grows to four or five inches height, and sometimes more. It rises with a single stalk from the root, but this soon divides into two branches, and each of these into two more. This is the most frequent state of the plant; but it sometimes is more, sometimes less divided, though always in this dichotomous manner. The stalks are covered very thick with leaves, especially toward the top, so that they usually appear larger there than at the bottom. The leaves are narrow, oblong, and pointed; they are a little convex on the outside, and concave on the inner, and they are of a yellowish colour. The stalks are considerably thick, and, where they are naked, are seen to be brownish. In the axils of the leaves, from the bottom to the top of the plant, there stand in autumn little capsules, which, when they are opened, are found to contain a fine yellow powder. They are of a kidney-like shape, and naturally open longitudinally; about the time that the capsules are full grown, it is common to see little oblong, cristated bodies, composed of six segments standing out about the tops of the branches; these seem to be embryo plants, ready to fall to the ground, and take root.

It is a common plant on some of the Welch mountains, and in some parts of Yorkshire and Derbyshire; elsewhere, with us, it is very scarce; abroad it grows abundantly on the Alps, and other mountains. Most of the botanical writers have described it. Ray, Bobart, and many others have called it, *Muscus erectus abietiformis*. Tournefort, *Muscus squammosus abietiformis*; and others, *Selago foliis et facie abietis*.

2. *Selago*

2. *Selago foliis angustissimis confertis.**The narrow, cluster-leaved Selago.*

This is a very tall and robust plant. It grows to twelve or fourteen inches high; it's stalk rises single from the root, and is at the bottom but moderately thick, yet very robust and strong; up somewhat higher it grows considerably thicker, and divides into two branches: each of these, after they have gone up single three or four inches, divide again into two, and these ramifications, finally, into two more. The division is sometimes carried yet farther, but this is the usual state of the plant; all the branches are covered with a number of oblong, narrow, and pointed leaves; those on the lower part of the stalk are shorter than the rest, and bend more downward. The others are longer, and, though not quite erect, yet droop but very little. In the axils of the leaves, from the top of the plant down to the base of the second ramification, there are placed capsules of a kidney-like shape; these are composed of two valves, and opening longitudinally, when ripe, they throw out a quantity of a fine yellow powder. The whole plant is much of a thickness, from the first ramification to the very summit of the branches.

It grows in many parts of America, in their damp morasses, and in some of their forests. Plumier has described and figured it under the name of *Muscus squammosus maximus, erectus, fabinae folio*, though perhaps erroneously, by the fault of the press, for the leaves are not at all like fawn. Dillenius has much better named it, *Selago cordis foliis reflexis*.

3. *Selago foliis brevioribus.**Short-leaved Selago.*

This is the weakest of all the Selago kind, yet it frequently stands quite erect, tho' it grow singly, and rise to ten or twelve inches in height. It's stalk is of the thickness of a small packthread at the base, and is pretty thick, covered with leaves down to the very ground. It continues of much the same thickness nearly to the top, where it ends somewhat smaller. It generally divides, at about half it's height, into two parts, and each of these divides again, once at least; besides this also, it sometimes sends out branches near the middle of it's height, and these always divide into two parts, and those sometimes are divaricated again near their tops. The leaves that surround the stalk near the base are very short, and brownish; those on the rest of the plant are of a yellowish green, and, though shorter than in any of the other species, yet are of an oblong figure, broadest at the base, and pointed. From the top of the plant, to near the first division of the main stalk, there are placed capsules, not of a kidney-like shape, but oval, which divide, when ripe, into two parts, and shed a quantity of a fine yellow powder.

Plumier first figured this species; he calls it, *Muscus squammosus maximus cordis folio vitriculis longioribus*. Tournefort calls it, *Muscus squammosus Americanus maximus*. Dillenius calls it, *Selago foliis camphoratae*. It is of American origin; it grows in their forests, about the stumps of trees.

There are only three known species of Selago, beside these described here. Those are, 1. The toadflax-leaved, great Selago, which grows to two feet or more in length; and, 2. The American Selago, with reflex, denticulated leaves. 3. The large, Indian, fir-like Selago.

A Moss, under the name of Selago, has been known in medicine, in the very earliest ages. Pliny tells us, that it was collected, with great superstition, for magical uses; and that the fume of it was good for diseases of the eyes. There appears great reason to believe, however, that not any of the plants we call Selago, at this time, but the *Lycopodium fabinae facie*, was the Selago of Pliny and the ancients: they all agree in telling us, that it was like fawn; and none of our species of Selago are at all like fawn, though that lycopodium is.

Our common Selago of Wales is of a strong taste, and that of a very peculiar kind. It is sometimes taken in decoction, by the country people, in their diseases: it operates very violently, both by vomit and stool. They use a decoction of it also to kill lice. It is said also to destroy worms in the bowels, and to promote the menses. In Germany it is a common purge for horses; and indeed, by the accounts handed down to us of it's operations, it seems a much properer medicine for horses than for men.

MOSES.

*M O S S E S.**Class the Sixth. Genus the Ninth.***POLYCOCCA.**

POLYCOCCA is a genus of Mosses, consisting of branches furnished with leaves, and producing in the axæ of those leaves capsules of a roundish figure, which, when ripe, open some into three, and some others into four valves, and contain accordingly either three or four regular seeds. Dillenius, from the resemblance of this genus to the selago, calls it, *Selaginoides*; it seems more expressive of it's character to name it from the number of divisions of it's seed-vessel, and the number of seeds contained in it.

There is only one known species of this genus, which is the plant our botanical writers have called by the English name of Seeding-mountain Moss.

POLYCOCCA.

This singular plant consists of procumbent branches, divaricated in various manners, and taking root in several places, as they creep along. These are covered with small and short leaves, placed alternately. They are of a pale green colour, broadest at the base, and terminate in a prickly point; they are rigid to the touch, somewhat hollowed at the base, and bent a little backwards; and, when nicely examined, their edges are seen to be beset with the small prickles, like those of the points. The extremities of the branches are some of them slender; but others are thicker than the rest of the plant, and form a kind of squammosæ and foliaceous heads: these, the succeeding year, grow larger, and produce seeds. At the time when they thus protuberate, there are no seeds, nor any thing of fructification visible in them, but they are covered with leaves larger than the rest, and, like those of the seeding-shoots, are more hollowed than the rest. These seeding-shoots grow up in the manner of spikes, from the several parts of the branches; they are an inch or two long, and sometimes more; and they are furnished with leaves resembling those of the branches, but larger, hollower, and more visibly spinose; they are of a paler colour also, and are placed alternately at small distances.

In the axæ of these leaves are placed the capsules; they are large, and stand upon no pedicles, and are trilocous, or quadrilocous, each containing either three or four seeds of the size of poppy-seeds, and of a whitish colour.

This plant has been described by most of the late botanical writers. Merret calls it, *Muscus erectus polyspermus*. Ray, *Muscus terrestris polyspermus*. Tournefort, *Muscus erectus, squammosus, polyspermus*. Linneus calls it, *Lycopodium caule repente ramis spica foliis parula instructis*.

It grows in wet places among stones, on the Welch mountains, and in some parts of Yorkshire, as well as in Lapland, and most of the northern parts of the world. The capsules are produced in June, and remain on the plant till winter.

*M O S S E S.**Class the Sixth. Genus the Tenth.***OPECA.**

OPECA is a genus of Mosses, consisting of branches furnished with leaves, and producing in the axæ of the leaves capsules, which have no pedicles, nor any calyptra, and which, when ripe, have several foramina in different parts of them, through which they discharge their contents.

There is only one known species of this genus.

OPECA.

This is a very beautiful Moss; it grows to five or six inches in height. It's main stalk sends off, on each side, several branches, which send off each several others; these

these stand alternately, and they, as well as the main stalk, are furnished with leaves set very thick, in an alternate order, opposite to one another. They are of a fine green colour, smooth on the surface, and pellucid; in shape broad, and obtuse at the ends; they are so disposed, that they give the branches a pennated appearance: they are convex on one side, and hollow on the other; and in this hollow part, near the insertion of the branches, they contain capsules which are small, of an oblong figure, and surrounded at the base by several little membranes. These capsules are composed of a thin membrane, including six globular bodies, three on each side, and opposite to these as many foramina, or holes, out of which, when ripe, they discharge a fine powder.

It is a native of America; the only specimens ever seen of it, in this part of the world, have been sent by John Bartram, from Pennsylvania. Its capsules are ripe in January. Dillenius has described it under the name of *Porella*; no other author has mentioned it.

M O S S E S.

Class the Seventh.

Such as consist of foliaceous matter, with evident fructifications arising from it.

Genus the First.

MARCHANTIA.

MARCHANTIA is a genus of Mosses, consisting of a congeries of foliaceous matter, on the several parts of which there are separate male and female parts of fructification. The male flower is placed on a long erect pedicle, arising out of a kind of vagina. Its cup is a perianthium, large, flat, and divided into eight or ten equal segments, and contains under it as many flowers, as there are segments. The corolla is monopetalous, turbinate, and shorter than the cup. The stamen is a single filament, undivided, and larger than the flower: the anthera is of an oval figure, and divides from the top into as many parts as there are segments in the cup: the farina is affixed to filaments. The female flower stands on the same plant, but does not rise from the surface: its calyx is a perianthium, consisting of one leaf of a membranaceous substance, permanent, and of the figure of a cup, or sunnel, serrated round the edges, and divided into two cavities, by a membrane which runs across its middle; in the lower cavity of this cup there are contained several naked seeds, of a roundish, but compressed figure.

1. *Marchantia imbricata foliis brevibus.* *Short-leaved, imbricated Marchantia.*

This species generally forms a cluster of leaves of an irregular and indeterminate figure; the leaves are short, moderately broad, and irregularly laciniated about the edges. They are of a dusky, disagreeable, green colour, and do not shine as those of some other of the species of this genus do. They have no visible veins on the upper side, but they are very thick set with lanuginous fibres, which serve as roots on the under side. They generally grow a great number together, one falling over another. They are fixed down by the roots quite to the edges, and, when closely examined, they appear of a reticulated texture, and the areolæ between the reticulations punctated. The pedicles sustaining the male flowers are about an inch long; the cup is divided into ten narrow, long segments. The female flowers are green, and of the shape of a hollow cone, with its base upwards. The membrane covering the seeds breaks very soon in this species, so that the seeds are almost always visible.

It grows by damp walls, and sometimes about the stumps of trees in woods. It flowers in July and August. Dillenius describes it under the name of *Lichen domesticus minor*. Linnæus, by that of *Marchantia calyce communi decempartito lacinii linearibus*; and Micheli, under that of *Marchantia capitulo stellato radiis teretibus*.

H h

2. *Marchantia*

2. *Marchantia foliis longioribus laciniatis.*
Long and jagged-leaved Marchantia.

The leaves of this species are often three or four inches long; they do not grow in imbricated tufts, as those of the former, but spread themselves irregularly about; they are from a third of an inch to an inch broad, and are deeply divided into segments. They are of a beautiful green colour, and have purple veins on their upper surface, and are reticulated; the spaces between the reticulations are of a figure, approaching to rhomboidal, and are not punctated, but plain; on the under part of the leaves there are lanuginous fibres, which fasten it down to the earth, stones, &c. but these do not reach quite to the extremities, so that the edges are loose. The pedicles on which the male flowers grow are two inches or more in length; the perianthium is divided into ten or twelve segments. The female flowers are of a funnel-like shape, small at the base, wide at the mouth, and dentated irregularly at the edges; every denticulation ends in a fine white hair. These contain a number of seeds, covered at first with a membrane, but which soon disappears. It grows in damp places by ditches, and in wells. The male flowers appear in May and June, the female ones in September; but they remain on the plant, till the male flowers of the next year appear. The botanical writers in general have described this, under the name of *Lichen vulgaris*, and *Hepatica fontana*. Micheli calls it, *Marchantia major capsularum crenis in longiusculum pilum deficientibus*.

There are three other species of the *Marchantia* distinguished by authors: 1. A broad, roundish-leaved one. 2. A very narrow, undulated-leaved *Marchantia*; and, 3. The dichotomous *Marchantia*, with very broad, rounded segments.

Dillenius calls this and the two following genera by the common name *Lichen*; and Linnaeus calls both those, as well as this, *Marchantia*: we think we see sufficient reasons for separating them. Micheli and Dillenius do not at all agree about their microscopical observations on this genus: this is no place to enter into such a controversy; but there might, perhaps, be a way found of reconciling their different accounts, since there is no doubt of their being both ingenious and candid writers. Much more than either of these authors have discovered, in regard to the other Mosses, as well as to these, may be made out by good glasses, but not enough perfectly to explain them by has hitherto appeared.

M O S S E S.

Class the Seventh. Genus the Second.

CONICEPHALA.

CONICEPHALA is a genus of Mosses, consisting of a foliaceous matter, furnished with fructifications, or male and female flowers, sometimes on the same plants, sometimes on different plants of the same species. The male flower is supported on a long pedicle: it's calyx is a common perianthium, formed of five segments, which do not separate, but compose together a kind of head of a conic figure, sometimes more acute, sometimes more obtuse; this perianthium contains five flowers. The corolla is monopetalous, turbinated, and shorter than the cup: the flamen is single, undivided, and is longer than the flower: the anthera is tumid, and oval, and opens from the top into five segments; the farina is lodged on filaments.

The female flower is composed of a perianthium, consisting of one piece, green, and not raised from the surface of the leaves; it is rounded below and flattish, and covered with little granules at the top, and is divided within into several cells, containing seeds of an elliptical figure. There is no corolla, nor any other visible part of fructification.

1. *Conicephala*

1. *Conicephala longifolia capitulo acutiore.**The long-leaved Conicephala, with a sharp-pointed head.*

This is a considerably large species; its leaves are three inches, or more, in length, and from a third of an inch to half an inch in breadth; they creep on the ground, and are fixed to it by multitudes of fibrous roots. They are of a bright green colour, and of a fleshy structure; they are reticulated on the surface, and divided into a sort of rhomboidal figures, which are punctated in a beautiful manner.

The male flowers grow on pedicles of an inch and half in length; the perianthium forms a conic head, sharp-pointed, and moderately broad at the base.

The female flowers grow like warts, on various parts of the leaves; in other plants they are of about a seventh of an inch in diameter.

It grows in damp, shady places, in great abundance. Its male flowers appear in March, the female ones in June, or July, but they remain on the plants till that time the next year. Most of the botanical writers have called this *Lichen pileatus*, and *Hepatica pileata*. Micheli calls it, *Hepatica vulgaris major*; and Linnæus, *Marchantia foliis dichotomis calyce communi quinquepartito*. Dillenius describes it under the name of *Lichen vulgaris major pileatus et verrucosus*.

2. *Conicephala brevifolia capitulo obtusifera.**Short-leaved Conicephala, with obtuse heads.*

This is a much smaller species than the former. Its leaves seldom exceed an inch in length, and are not much divided, but sinuated round the edges; they are of a dark green colour, and have no veins visible on them: they are reticulated, as it were, or scaly, but not divided in a rhomboidal form; when abundant moisture makes the leaves branch out, it is usually in a dichotomous manner.

The pedicles which support the male flowers are about an inch in height, and of a brown colour; the perianthium forms a head of an obtusely conic figure; they are divided into five segments usually, but sometimes into four or six. The pedicle of these has no vagina at its base. The female flowers are small and warty; they are of a dusky green colour than the leaves, and rough on the surface. The male flowers appear in April, the female ones in July, or August.

It is not unfrequent with us on the damp banks of ditches. Dillenius describes this species under the name of *Lichen pileatus parvus foliis crenatis*. Linnæus calls it, *Marchantia calyce communi, quinquifido, hemisphærico*; and Micheli, *Hepatica media capitulo hemisphærico*.

3. *Conicephala angustifolia divaricata.**Narrow-leaved, divaricated Conicephala.*

This is an extremely singular species. The leaves are an inch or two in length, and about a sixth of an inch in breadth; of a deep green colour, and marked with a middle rib, very visible all the way: they are variously divaricated in a dichotomous manner, and are not crenated at the edges. The extremities of them are cordated, or have a depression or indenting in the middle, and from this indenting rises the stalk, which supports the male flowers. This is about an inch high, moderately thick, and of a brownish colour. The head, formed by the common perianthium, is somewhat obtuse, though less so than in the last species. The female flowers are large, oblong, thick, and rough at the top.

It is a very rare species with us. I once found it on the boards behind a water-mill in Buckinghamshire, and once near Mount-ford in Leicestershire. Micheli has described it under the name of *Hepatica minor angustifolia capitulo hemisphærico*.

The female flowers, in this species, are sometimes on the same plants with the male, sometimes on different ones.

Micheli does not allow the elliptical bodies contained in the female flowers of the *Conicephala*, or *hepatica*, as he calls it, to be seeds. We do not certainly know, indeed, that what we call seeds in any of the plants of this class are truly so.

M O S S E S.

Class the Seventh. Genus the Third.

SELENIA.

SELENIA is a genus of Mosses, consisting of a foliaceous matter, and exhibiting male and female organs of fructification on different parts of the same plant.

The male flowers stand on long pedicles, which grow from vaginæ on the leaves of the plant. The cup is a common perianthium, consisting of four segments, disposed in a cruciform manner, when ripe, and containing four flowers. The stamen is a single filament, undivided and longer than the corolla, which is monopetalous, turbinate, and shorter than the cup. The anthera, on the head of the stamen, opens into four segments, and discharges a farina affixed to fine filaments.

The female flower is composed of a perianthium without a corolla; this is monopetalous, and undivided, and is affixed to the leaves in form of a crescent; in the hollow of this there are lodged a number of green, roundish, flattened seeds.

Dillenius blends this genus with the two former, under the common name Lichen, as does also Linnaeus, under that of Marchantia. Micheli separates them, and calls this Lunularia, a word too nearly like the Lunaria, a name of a different plant is found. There is only one known species of this genus.

SELENIA.

This is a small, but very beautiful plant. It generally grows in considerable quantities together, and its leaves lie in an imbricated manner over one another. They are from half an inch to an inch in length, and near half an inch in breadth; sometimes simple, sometimes divided into three or four lobes. They are moderately thick, not pellucid, and of a tolerably bright green colour. There are no veins discernible in them, but they look, as it were, squamose; on the under side there are fine lanuginous roots, of a whitish colour, disposed in a row along the middle of every leaf: and sometimes in ramifications from that; from the middle of the leaves arise the pedicles that support the male flowers; they are about three quarters of an inch in length, and moderately thick. The segments of the perianthium are hollow. The female flowers or lunules are found on different parts of the plant, and that in great number, each containing a large quantity of seeds.

This plant is frequent about London on old walls, and in other damp places. It flowers in July and August. Dillenius has described it under the name of Lichen feminifer, lunatus, florifer, pileatus, tandem cruciatus. Micheli, under that of Lunularia vulgaris. Linnaeus, under that of Marchantia calyce communi quadripartito lacinii tubulosis. Other of the botanical writers have called it, Lichen feminifer parvus, and Lichen petraeus acaulis.

M O S S E S.

Class the Seventh. Genus the Fourth.

JUNGERMANNIA.

JUNGERMANNIA is a genus of Mosses, consisting usually of stalks furnished with leaves, disposed in a pennated or squamose manner; sometimes of leaves only; and producing visible male and female parts of fructification.

The male flower stands on a long strait pedicle, which arises out of a vagina, growing from the upper part of the surface; it has neither calyx, nor corolla, but consists only of an anthera, which is at first of an oval figure, but afterwards opens into four segments, and remains in this state a long while on the plant.

The

The female flower has no pedicle, but stands sometimes on the same plant, sometimes on another of the same species; on the extremities of the branches of the plant, or on other parts of it. There is no calyx or corolla visible, but all that is seen is a number of seeds lying naked in a cluster, sometimes only a single one.

Dillenius has given this genus of Mosses the name of *Lichenastrum*. Linnæus and Micheli call it, *Jungermannia*; but the latter has described and figured some of its species, under the name of *Muscoides*, and others under that of *Marfilæ*.

1. *Jungermannia pennata vagina dentata*.
Pennated Jungermannia, with a dentated vagina.

This is a very elegant little plant. It grows to two or three inches in length; its branches are sometimes simple, sometimes divaricated; they are beset on each side with a row of fine, pellucid, bright green leaves, broad and obtusely pointed. The branches, thus pennated, somewhat resemble those of the trichomanes. The pedicles which produce the male flowers are about an inch long; they arise out of oblong vaginæ, dentated at the edge, and placed sometimes in the middle, sometimes near the base of the plant. The anthera is round at first, but divides into four parts. The seeds are numerous, and very small, and are dispersed over several parts of the plant, but principally about the ends of the branches.

It is found in our woods among the other Mosses, about the stumps of old trees; it flowers in April and May. Dillenius calls it, *Lichenastrum trichomanis folio e basi et medio florens*.

2. *Jungermannia divaricata pediculis brevibus*.
Divaricated Jungermannia, with short pedicles.

This is a very singular plant. It grows to two or three inches in length, and often spreads to near as much in breadth. It grows from its base with a single stalk, of the thickness of a small twine, but not round; this sends off a number of branches, and those afford yet others, and towards the extremity the main stalk itself divides into several portions, all branched. The stalks are all covered with hollow leaves, in a double series, the upper larger than the under, and of a somewhat triangular figure; they are green at first, but afterwards become of a purplish brown. The whole plant hangs loose from the thing it grows on, and, at the extremities of its several ramifications, produces oblong vaginæ of a square figure, and divided at the top into four segments; from these arise short pedicles, scarce a fifth of an inch long, beyond the vagina, and on the heads of these stand the antheræ, one on each; they are tumid and roundish, and finally burst into four segments; the seeds lie in clusters at the extremities of the branches.

It grows on rocks, and on the trunks of old trees in our woods: it is plentiful enough about London. Dillenius has described it under the name of *Lichenastrum imbricatum tamarisci Narbonensis facie*. Linnæus calls it, *Jungermannia foliis imbricatis serie duplici, superioribus, subrotundis, majoribus, convexi; obtusis, majoribus*.

3. *Jungermannia foliosa pediculis longissimis*.
The leafy Jungermannia, with very long pedicles.

This species differs extremely from the two former, in that it is not composed of branches furnished with leaves, but of leaves only, and much resembles the *selenia* in figure. It generally grows single. Its leaf is about an inch long, and half an inch or less broad, sinuated at the edge, and usually divided into two or three lobes. It is of a bright green colour, and is affixed to the ground by a series of roots running all along its under part; when not in a flowering state, it would never be suspected for a *Jungermannia*: from the middle of the leaf arises a short dentated vagina, and from this a very long pedicle, on the summit of which appears the anthera, roundish at first, but afterwards dividing into four segments.

It is not uncommon about the banks of rivers, and in other moist places. It flowers in March and April. Dillenius has described it under the name of *Lichenastrum capitulis rotundis e foliorum medio enascentibus*; and Micheli, under that of *Marfilæ major, atrovirens, floribus albicanibus e foliorum medio enatis*.

4. *Jungermannia foliosa divaricata vagina globosa.*
Divaricated, foliose Jungermannia, with a globose vagina.

This is a very small, but a very beautiful species. It consists of a single leaf of about an inch long, and a third of an inch broad, and so divaricated, that it extends often as far in it's whole diameter, as in it's length. It is of a beautiful pale green colour, very thin, and somewhat pellucid; it's several segments are not sinuated at the edges, and they terminate in obtuse points. They have a rib running all along the segments, and sometimes they grow in clusters, though more usually singly; on the lower part of the middle ribs of these leaves there stand vaginæ, of a very peculiar structure; they are globose, hairy, and succulent; from these there grow pedicles of about an inch long, which sustain each it's anthera, which is small, roundish, and of a brownish-red colour, and soon after it's appearance divides into four segments. The seeds, both in this and the former species, are very small, and are placed in clusters toward the edges of the leaves.

This grows about the stumps of old trees in Hornsey-wood, and some other places about London. It flowers in April. Dillenius has described it under the name of *Lichenastrum tenuifolium furcatum thecis globosis pilosis*. Vaillant calls it, *Hepatica arborea globuligera*; and Micheli, *Marfilea minima, angustifolia, floribus ex inferiori foliorum parte c subhirsuta et turbinata vagina erumpentibus*.

It is to be observed, that Micheli makes all the much-branched *Jungermannia* *Muscoides*, and all the foliose ones *Marfileæ*. The more singular species of *Jungermannia*, beside those described here, are, 1. The purple, hollow-leaved *Jungermannia*. 2. The scorpion-tail'd kind, with fimbriated leaves. 3. The fine, fern-like kind. 4. The rounder-leaved, arbor vitæ-like kind. 5. The woolly, fern-like *Jungermannia*. 6. The round-stalked, purple *Jungermannia*. 7. The jagged *Jungermannia*, with long vaginæ. 8. The multifid, foliose *Jungermannia*. 9. The little areolar *Jungermannia*.

M O S S E S.

Class the Seventh. Genus the Fifth.

ANTHOCEROS.

ANTHOCEROS is a genus of Mosses, consisting of a foliaceous matter, extended on the ground, and producing male and female fructifications; the former very evident.

The male flower rises immediately from the plant, without a pedicle: it consists of a monophyllous calyx, of a cylindric figure, with an undivided edge; there is no corolla, nor even stamen, but a single anthera of a very singular form arises. From the base of every cup, this is very long, slender, tubulated, and composed of two valves, between which is a capillary filament, covered with farina.

The female flower is sometimes on the same, sometimes on a different plant. It grows to the leaf without any pedicle, and is monophyllous, and divided into six segments, and contains three seeds lodged in it's bottom.

There is not, however, an absolute certainty, as to the number of the seeds, or of the segments of the cup: sometimes there are only two seeds, sometimes only one, and the number of segments is in proportion.

1. *Anthoceros foliis magis laciniatis.*
The more jagged-leaved Anthoceros.

This species appears, first, in form of a cluster of small green leaves, growing together in a circular, or nearly circular, form, and of the diameter of half an inch, or an inch; the leaves are separately of an irregularly oblong figure, rounded at the ends, and sinuated both there and at the sides: they are very thin, of a glossy surface, and somewhat pellucid. From several parts of the surfaces of these leaves, there

there rise vaginæ of an oblong figure, and out of these there grow certain oblong bodies, one from each; these are at first as fine as hairs, but they afterwards grow thicker, and to two or three inches in length; these, when ripe, split from the top half-way down, and appear to be antheræ, loaded with a yellow farina. Sometimes on the same plant, and sometimes on others which do not produce these antheræ, there appear in several parts of the leaves little prominences like warts, which, when ripe, open into six parts, and shew that they are the female flowers, containing each three seeds. This fructification is very small, and it requires a microscope to distinguish it well; when thus examined, six is the usual number of the segments, and three of the seeds, but it is not certain. It flowers in April. It is found in damp places, and by way-sides, in many parts of England. I have met with it about Mendip-hills in great abundance. The flowers appear in April, and are ripe in June. It has been described by Merret, under the name of *Lichen capillaceus ex plurimis capillamentis nigricantibus constans*, a strangely wild and imperfect name. In the third edition of Ray's *Synopsis* it is called, *Lichenastrum gramineo pediculo et capitulo oblongo bifurco*. Micheli calls it, *Anthoceros minor foliis magis crenatis subtus incurvatis*; and Dillenius, *Anthoceros foliis minoribus magis laciniatis*.

2. *Anthoceros foliis minus laciniatis*.

The less jagged-leaved Anthoceros.

This species makes it's first appearance with two, three, or four leaves together, which do not form a tuft, as those of the other, but scatter several ways; they are near an inch long, about a third of an inch broad, and slightly sinuated about the edges; they are very thin and transparent, and of a bright green colour. From the several parts of these leaves arise vaginæ, small at the leaf, and somewhat undulated about the rim; from these there grow antheræ of an inch and half in length, which burst open, when ripe, and shed a greenish-yellow farina. On other plants of the same species, never on the same individual, so far as I could observe, there grow small protuberances like warts, which open into an uncertain number of segments, and contain one, two, or three seeds.

I found this species abundantly at the foot of an old wall, by the road to Shepton Mallet in Somersetshire. It flowers in May and June.

Micheli describes it under the name of *Anthoceros major*; and Buxbaum, under that of *Lichen hepaticus pediculis gramineis*.

There are three other species referred to this genus by authors. 1. The narrow-leaved *Anthoceros*, with a short flower. 2. The *Anthoceros*, with a finely divided leaf; and, 3. The thick-headed, short *Anthoceros*. None of these have been found in England.

M O S S E S.

Class the Seventh. Genus the Sixth.

R I C C I A.

R I C C I A is a genus of Mosses, consisting of a foliaceous matter, procumbent on the ground, on which there are evident male and female fructifications, sometimes both on the same, sometimes on different plants of the same species.

The male flower has neither calyx nor corolla, but consists of a single anthera, of an oblong, tubulated form, which grows to the leaves without any pedicle, and opens from the point, to discharge a fine greenish farina.

The female flower has no corolla, and scarce any calyx; it consists principally of a pericarpium of a globular figure, in which there are contained a number of seeds. The male flowers in this genus grow in some species from the middle rib of the leaf, in others on other parts of the superficies, but usually in a double row. The female flowers in some are placed in the chinks, and stellated scrobiculate on the leaves, and rise above the surface; in others they are contained within the very substance of the leaves, and are not visible till the outer membrane of them is decayed. The pericarpium

pium does not naturally burst open in any of them, but the rain dissolves the texture of it, and the seeds are then discharged.

1. *Riccia latifolia fructu aspero.*
Broad-leaved Riccia, with a rough fruit.

This is a very beautiful little plant, and has much the appearance of some of the mar-
chantias. It consists of a single leaf, which generally sends out four, five, or six di-
varications from the same base: these extend themselves in a circular form, and are
fixed down to the ground by roots, sent all along from the middle rib; they are each
about an inch long, and, in the broadest part, about a third of an inch in breadth.
They are narrowest near the base, and, at about half their length, they divide into
two ramifications, which usually subdivide again, or, at least, are dented at the end
in a sort of fissure, and are of a pale green, and of a kind of tessellated appearance;
at the middle rib there stand two rows of short, green, erect anthers, and, in other
parts of the leaves of the same plant, are placed the fruit, which are roundish in figure,
and somewhat rough on the surface, and very small, but prominent, above the surface
of the leaves.

It is a very scarce plant; I have only found it once, which was in a damp lane near
Soiston in Lincolnshire: it was in flower in the end of April. It is very remarkable of
this plant, that it has a somewhat aromatic taste, like coriander seeds. Doody has
mentioned it, in Ray's Synopsis, under the name of *Lichen verrucosus*; but no other
author has given us any account of it, except this and Micheli, who calls it *Riccia*
major, *coriandri sapore*, *foliorum superficie velut tessellata*, *fructu aspero*.

2. *Riccia obtusifolia pinguis.*
Flat, blunt-leaved Riccia.

This is a much smaller plant than the former; it never extends to more than three
quarters of an inch in its full diameter. It grows in a kind of irregularly circular figure,
divaricating from the same base into five or six parts, which are short, and broadest
at the extremity, where they are a little sinuated. They are of a dead green colour,
thick and fatty to the touch, and moist on the surface. From the middle of each di-
varication, or leaf, there grows a double row of anthers, or male flowers: they are
short, and obtuse at the point, and in the very substance of other plants of the same
species, never of the same, so far as I could observe, there grow roundish and smooth
capsules, containing a vast quantity of minute seeds. It grows in damp places in woods,
and under hedges, and flowers in February. Micheli calls it, *Riccia minor*, *latifolia*,
pinguis, *aspergius crystallina perfusa*.

3. *Riccia foliis laciniatis.*
Jagged-leaved Riccia.

This little plant seldom exceeds a third of an inch in diameter, though it grows in
a kind of circular form. It expands from the same base into four or five divarications,
which are all of them ramified into five or six parts, somewhat in the manner of a
stag's-horn; the extremities are sharp-pointed. The leaves are of a deep green
colour, glossy on the surface, and somewhat succulent. From their middle there rises
a double row of anthers, which are very short, of a browner colour than the leaves,
and blunt at the ends: they split after a certain time. The female flowers seem of
the nature of those which are buried within the substance of the leaves: on pressing
the plant gently between the fingers, there are felt little granules, harder than the rest,
which are probably the fruit, but a microscope makes them out but very imperfectly.

The plant is frequent on Hampstead-heath, on Blackheath, and about Putney, but
it is so small that it must be carefully looked after. It flowers in April. Dillenius has
described it under the name of *Lichen omnium minimus foliis scissis super terram*
expansis. Micheli calls it, *Riccia minima*, *nitida*, *segmentis angustis acutis*.

The other species of Riccia are, 1. A large Riccia, with smooth, pyramidal fruit.
2. The blue-green, deep-cut Riccia. 3. The lacinated Riccia, with hairy edges.
4. The narrow-leaved, greyish, thick Riccia. 5. The small Riccia, with blunt seg-
ments.

M O S S E S.

M O S S E S.

Class the Seventh. Genus the Seventh.

TARGIONIA.

TARGIONIA is a genus of Mosses, consisting of foliaceous matter, and producing distinct male and female flowers on the same plants. The male flower has no corolla; the calyx is monophyllous, and divided into two parts, resembling two valves, convex on the outside, and concave within, and adhering to the plant without a pedicle. In this is placed on a short stamen a single anthera, of a tumid, roundish figure, dentated at the top, and filled with a yellowish farina, adhering to fine filaments. The female flower has neither calyx nor corolla visible, but is a roundish, tumid pericarpium, containing a number of cells, and in each of these an oval seed. These grow on the sides of the leaves, the male flowers on the tops. There is only one species of this genus known: this is the

*Targionia foliis oblongis.**The oblong-leaved Targionia.*

This is a very small, as well as a very singular, plant. It consists of a single leaf, which is of an oblong figure, narrow at the base, and growing gradually broader to the extremity, where it is indented in form of a heart. The whole leaf is scarce half an inch long. It has a multitude of little fibres near the base, which serve it as roots; it's upper end is loose. The whole leaf is of a dusky green colour, and not pellucid, but it is dotted all over, as it were, with white; when fully grown, it often becomes throughout of a purplish colour. At the extremity of the leaf, in the very indenting just mentioned, there grows a bivalve calyx, of considerable size in proportion to the plant, in which is the single anthera, on it's short stamen, full of the farina. On the sides of the leaves, and on their lower part, there grow certain wart-like bodies, roundish, tumid, and somewhat rough on the surface. These are the pericarps, containing the seeds of the plant, in several distinct cells, but so small, that it requires a good microscope to distinguish them.

It is not a native of England. Micheli says it is common in Italy. I have received fine specimens of it from Bugneres in France, from which I have made out the characters, especially of the female fructification: if I had had the recent plant, perhaps, they had been more perfect.

Dillenius calls this, from C. Buxine, *Lichen petraeus minimus fructu orobi*. Columna, who first discovered it, calls it, *Lichen acaulos hypophyllocarpus*. Buxbaum calls it, *Lichen terrestris minor seminifer*; and Micheli, *Targionia minima vulgaris*. The several authors, who have described this plant, have had very different opinions, as to it's fructifications. Micheli will not allow the protuberances on the sides of the plant to be the fruit, but he has allowed bodies of the very same figure and structure to be fruits in other cases.

M O S S E S.

Class the Seventh. Genus the Eighth.

SPHÆROCARPUS.

SPHÆROCARPUS is a genus of Mosses, consisting of foliaceous matter, expanded on the ground, and producing very large and obvious fructifications.

It is probable that the male flowers are produced on separate plants from the female, and have not been discovered to belong to the same species; no male parts of fructification are described to us, and the plant is not at hand for our examination. The female parts consist of a tubulated and inflated vagina, within which is contained a large globular capsule, containing a great number of small, loose seeds.

K k

There

There is only one species of this genus known.

Sphaerocarpos.

The first appearance this plant makes is in form of a foliaceous crust, of an indeterminate figure, which extends itself to an inch, or more, in diameter, and is variously undulated at the edges; this is of a dusky colour, but of a tolerably smooth surface, and is fixed down to the ground by a multitude of fibrous roots. On its surface there appear, in clusters, a kind of inflated vaginæ; they are about a sixth of an inch in length, and are narrow at the base, wide near the upper part, but again contracted into a narrow mouth: these do not naturally open, but rot away, and so let loose the fruit to rot in its turn, and let out the seed; but, if cut open, there is found, near their base, a round body, considerably large in proportion to the plant, which, when opened, is found full of smooth granules.

Dillenius quarrels with Micheli for taking these for seeds, and rather supposes them to be globules of farina, and the globule containing them an anthera; but he is certainly wrong in this; the farina of all these plants is affixed to filaments, these globules are perfectly loose.

The plant is not of English growth, but is frequent in Italy, in garden-walks, and in damp places. It flowers in April.

These are the genera and more singular species of Mosses known. If we have omitted the naming some which make a figure in the works of authors, it has been owing to our having discovered them, however postously figured, not to be distinct species, but mere varieties of other species, named as such in their places.

We should not pass over in silence our having omitted one of Linnaeus's genera of Mosses, the blasia; that author took the account of the genus from Micheli, who had but imperfectly examined what he declares to be the only species of it; and Dillenius has, by a very accurate enquiry into its nature and characters, justly determined it to be a species of muscivora; as such, it is mentioned in our list of the species of that genus, affixed to our description.



T H E

T H E
H I S T O R Y
O F
P L A N T S.

P A R T II.

C R Y P T O G A M I A.

Plants of, or approaching to, the figure of what are called the more perfect ones, but whose parts of fructification are not distinct or obvious.

S A L V I N I A.

SALVINIA is a genus of plants, producing separate male and female flowers, on the different parts of the same individual.

The male flowers are very numerous, and stand on the surface of the leaves. They have neither calyx nor corolla, but consist of an obtusely conic body, supplying the place of a filament, on which there are placed four anthers: these are erect, oblong, and slender, pointed at the end, and twisted spirally all the way up.

The female flower has neither cup nor corolla. The fruit is of a roundish figure, and contains four distinct cells, in each of which are contained several roundish seeds.

Linnaeus calls this genus *Marfilia*; but, that being a name already given by Micheli to another very different genus of plants, we have thought it more proper to retain to this genus the original name *Salvinia*, given it by the same Micheli.

This genus comprehends the *Salvinia* of Micheli, and the *Pitularia* of Dillenius.

1. *Salvinia foliis brevibus obtusis.*
Short, obtuse-leaved Salvinia.

The root of this species is fibrous, and the fibres hairy; the stalks are simple, and about four or five inches long: they are round, hairy, and solid. The leaves stand in pairs; they are oblong, very broad, and obtusely pointed; their pedicles are very short and thick, and, from the same part of the stalk whence every pair of leaves issues, there also proceeds a cluster of roots adhering to an oblong head.

The leaves are even at the edges, somewhat cordated at the base, and of a bright green colour. Their surface appears punctated from the frequency of the male flowers.

These

These stand in rows very near one another, proceeding from the middle rib to the edge. Each way there are twenty, or more, of these rows on every leaf, on each side the rib. The fruit grows in a very different place; it adheres to the lower end of the head of every cluster of roots, and is every way surrounded and covered by the fibres.

It is an aquatic plant, and is very common in brooks, ditches, and ponds about Pisa; in the Auxerre, about the foot of mount St Julian, and in many other places; but we have it not in England: it floats upon the water. It has been long known among the botanical writers, tho', till Micheli, nobody was at the pains to find out it's fructification. C. Bauhine calls it, *Lenticula palustris, latifolia, punctata*. J. Bauhine, *Lens palustris Patavina*.

2. *Salvinia foliis junceis.*
The rush-leaved Salvinia.

Pepper
Grass.

This species does not at all resemble the former in it's external figure. It sends out long, simple, round flagella, of the thickness of a small packthread, which creep along the surface of the ground; these are five or six inches long; at every inch, or thereabout, there is sent downwards a root, consisting of three or four simple fibres, and from the same part of the flagellum upward as many leaves. The leaves stand erect, and are two, three, or four inches long; they are round like rushes, and of the thickness of a small packthread, largest at the leaf, and gradually smaller, till they terminate in a point.

In the axils of these leaves stand the capsules; they are affixed to the flagellum by very short pedicles, and are at first oblong, afterwards more tumid and rounder; they are covered with a brown, hairy membrane: when cut asunder, they shew four cells; but, if suffered to grow to the full maturity, they separate into four parts; in each of which are contained a great number of small, roundish seeds.

This species grows in marshy grounds, and is not uncommon with us, but it's resemblance to grass makes us overlook it. It is common on Hounslow-heath, and in many parts of Surrey and Sussex. Vaillant and Dillenius call it, *Pilularia*. Ray, *Graminifolia palustris, repens, vasculis granorum piperis amula*. Merret, *Gramina piperinum*. Plukenet calls it, *Muscus aureus, capillaris, palustris, folliculis rotundis quadripartitis*.

LEMNA.

LEMNA is a genus of plants, producing distinct hermaphrodite and female flowers, on the same plant. In the hermaphrodite flowers the calyx is monophyllous, and of a roundish figure, and opens sidewise; it is dilated obliquely outwards, and is large, expanded, obtuse, and not divided at the edges. There is no corolla, but in this calyx there stand two subulated, crooked filaments, of the length of the cup, and on these double globose anthers. In the female flower there is no corolla; the calyx is the same as in the other. The germen of the pistil is of an oval form; the style is short and permanent, the stigma simple. The fruit is a capsule rounded, but terminating in a point, and contains only a single cavity; in this are lodged a small number of seeds of an oblong figure, pointed at each end, and striated on one side.

This genus comprehends the *Lenticula* of Dillenius, &c. and the *Hydrophace* of Burbaum.

1. *Lemna folio subrotundo monorrhiza.*
The roundish-leaved, single-rooted Lemna.

Duckweed.

This is the species of Lemna most frequent in our standing waters, and often covers them entirely. Its leaves are of an irregularly rounded figure, and of about a sixth of an inch in diameter. Each plant properly consists of a single leaf, from the center, or near the center, of which descends a single fibre, by way of root. The leaf is green on both the upper and under sides. The hermaphrodite flower is produced from one side of the leaf; the female flower, from the opposite part on the other side. Both flowers are of a whitish green in colour, but the calyx does not remain long to either; so that it is more usual to see only the stamina and pistil. The root is an

an inch and half in length, and at it's bottom has a conic case, which falls off, as it grows old or decays. This species flowers in June, and it is at that time only that the flowers are to be expected to be seen perfect: the stamina and pistil remain, indeed, till the end of July; and the seed-vessel may be found till winter. A thousand places may be searched, before a single plant of this is found in flower; but the most probable for it's flowering are, where there is most sun, and greatest plenty of water. The botanical writers have described this under the names of *Lens palustris*, and *Lenticula palustris vulgaris*.

2. *Lemna folio oblongo monorrhiza.*

The oblong-leaved Lemna, with a single root.

This consists of a single leaf, and single root, as the former. The leaf is of an oblong figure, obtuse at each end, and broadest near the middle; it is moderately thick, and something larger than the leaf of the former species, or at least it is full as broad, with more length; it is of a pale green, both on the upper and under sides. The root proceeds from nearly the middle of the leaf, and is a single white fibre, of two inches and a half, or more, in length, covered, at it's extremity, with a conic case as the others.

This is less frequent than the former species. I have met with it plentifully in Wiltshire. It's flowers are as in the former. Matthiolus has a figure of it, but without a distinct name. Micheli calls it, *Lenticularia media, monorrhiza, foliis oblongis utrinque viridibus*.

3. *Lemna foliis latis ovatis polyrrhiza.*

The many-rooted, broad, oval-leaved Lemna.

This is the largest of all the simple Lemnæ. It's leaf is twice or three times as large as that of the common Lemna, of an oval or pear-fashioned shape, very large, and broad at one end, and small at the other; it is considerably thick, and of a bright green colour on the upper side, and of a fine purple underneath. Every leaf has, instead of a single fibre, by way of root, ten, twelve, or more, but they are short, seldom exceeding an inch in length: each of them has it's conic case at the end, and they all rise near one another, and that nearly in the middle of the leaf.

This species is very common in our standing waters, with the ordinary Lemna. It's flowers are produced from the two sides of the smaller part of the leaf, near the extremity. Commelin calls this species *Lenticula palustris major*. J. Bauhine, *Lens palustris, superne virens, inferne nigricans*; his description only is to be regarded, however, for the figure does not express it.

4. *Lemna folio ovato monorrhiza.*

The single-rooted, oval-leaved Lemna.

The leaf of this species is exactly of the shape of that of the former, very large and rounded at one end, and very small, but rounded also, at the other; there is also a sort of neck between the two parts, somewhat distinguishable in the former, but more so in this. This is of a pale green on the upper side, and of a yet paler or whitish green on the lower; very thick and fleshy; more so, indeed, than any other species, and very prominent on the under side: from the center of this leaf issues a single fibre, longer than that of any other species; three inches is a common length, sometimes it is much more. This species is less frequent than the others, but it flowers more constantly than any of them. I have observed it in the ponds on Putney-heath, where it is common to find it in flower in July. It is described, in the *Flora Altdorffensis*, under the name of *Lenticula aquatica foliis minoribus inferna parte in vesiculam ductis*. Micheli calls it, *Lenticula palustris major, inferne magis convexa, fructu polyspermo*.

5. *Lemna folio ovata arrhiza.**The oval-leaved Lemna, with no root.*

This is the smallest of all the Lemnæ; it floats on shallow waters, and consists of a single leaf, not exceeding the size of the head of a large pin, but of an oblong oval figure. It is somewhat convex on the under side, and whitish; on the upper side it is of a pale green. The flowers are produced from the opposite sides of the smaller end of the leaf, and, from the opposite end, there frequently grows a single new plant; this is so fixed to the old one, that it leaves a hole in it on separating. This species is common on standing waters, in the fens in Lincolnshire. Micheli calls it, *Lenticularia omnium minima arrhiza*.

6. *Lemna pediculata ramosa foliis oblongis.**The ramose, pediculated Lemna, with oblong leaves.*

This is so different in its appearance from the other Lemnæ, that nothing but a careful examination can instruct people that it belongs to the same genus; the others all float loose upon the water, this is originally rooted in the mud, though it can support itself very well loose too. It rises with a single, round, smooth stalk. At the height of an inch, or somewhat more, from the base, this produces a single leaf, and, from the origin of that leaf, it divides itself into two parts: each of these, at the distance of half an inch, produces its leaf, and divides again, and so on; so that, from one stem, a cluster of a hundred, or more, ramifications is soon formed. Though the leaves which stand at the divisions of the branches are single, at the extremities it is always otherwise; there are there always three leaves, growing together in an odd manner, two growing from the lower part of the principal leaf, and making, with it and its pedicle, a kind of a figure of a cross. The leaves are about a third of an inch in length, and half as much in breadth, and of a pale green. From all parts of the plant there are sent down roots, perfectly like those of the other Lemnæ; they are single, very slender filaments, white, hollow, and covered with the same kind of conic scale, at the extremity, as those of the other Lemnæ.

This singular species is not uncommon about London, in little ponds. I have found it abundantly in one by the side of the common foot-way to Hampstead. C. Bauhine calls it, *Lenticula aquatica trifolca*; Lobel, *Hederula aquatica*.

Beside these six distinct species of the Lemna, there are two varieties which have so singular an appearance, that they may easily be mistaken for distinct species also: these are a very small, oblong, and thick-leaved kind, and a larger, roundish, and thin-leaved one. The first of these is a variety of the Lemna folio oblongo monorrhiza, owing to too much sun and too little water: the other, of the Lemna folio ovata monorrhiza, owing to too much shade. Micheli mentions them as distinct species; he calls the first *Lenticula palustris minima*, *atrovirens*, *utrinque pene convexa*; and the other, *Lenticula palustris media*, *pallide virens*, *inferne minus convexa*, *radicibus longissimis*, *fructu dispermo*. The number of seeds in the capsules of this genus is unlimited, and varies occasionally in the different plants of the same species; all the rest of the difference is owing to the different degree of shade and sunshine, and different quantity of water.

The common Lemna is recommended, by many authors, as a refrigerant and astringent. Bates tells us, also, of a wonderful cure performed by an infusion of it in wine, in an obstinate jaundice.

C H A R A.

CHARA is a genus of plants, with hermaphrodite flowers. The calyx is very small, and composed of two leaves: there is no corolla, nor any filament, but a single anthera, of a globose figure, is affixed to the receptacle. The germen of the pistil is oval; there is no style, but there are three broad stigmata. The seed is single, and of an oblong oval figure.

Dillenius has called this genus *Hippuris*; others have confounded the species of it with the equisetæ, or horsetails. Vaillant first described its characters, but not exactly as they are found: he mentions a monopetalous corolla, and a capsular pericarpium; Linnaeus does not allow them.

1. *Chora*

1. *Chara caulis levis.**The smooth-stalked Chara.*

The root of this species is fibrous; it penetrates perpendicularly into the ground, to the depth of three or four inches: from this arise several stalks, which are round, slender, and smooth, but longitudinally and somewhat obliquely striated; they are geniculated and procumbent, usually spreading themselves several ways along the surface of the mud under water, with only the tops bending upwards. These stalks are from six inches to a foot, or more, in length, and they send out several branches; and these, as well as the main stalk, send out, at the several joints, numbers of small, oblong leaves, divided at the extremities, and terminating in points. The seeds are brown, small, and of an oval figure, and glossy surface, and they lie naked. The whole plant is of a greyish-green colour, while in the water; and of a whitish-grey, when dried. It is of a disagreeable smell and taste, and so brittle, that it is easy to rub it to pieces between the fingers, or even to crumble it to powder.

It is common in ditches and standing waters about London: it grows principally in muddy places, under three or four feet water. Linnæus calls it, *Chara vulgaris*, in his *Flora Laponica*; *C. Baubine*, *Equisetum fortidum sub aquis repens*; Vailant, *Chara vulgaris foetida*.

2. *Chara aculeis caulinis ovatis.**The oval, prickled Chara.*

This species loves standing waters, and grows sometimes at five, six, or more feet depth. Its root is composed of a vast number of fibres: its stalks are numerous, six, eight, or more, from one root; they are round, geniculated, lightly striated, and armed at the joints with robust and thick spines. They grow to a foot, or eighteen inches, in length, when in deep water; where it is shallower, they sometimes do not grow to more than five or six inches. The joints are beset with numbers of narrow, oblong leaves, and, toward the tops, are much thicker than elsewhere. The whole plant is of a greyish colour. It is extremely brittle, and, when taken into the mouth, it feels gritty and hard, like the corallines.

This is frequent in the little ponds in Essex and Kent, and in many other places. Bobart calls it, *Equisetum fragile, majus, subcinereum, aquis immerium*; and Johnson, *Hippuris coralloides*.

3. *Chara aculeis caulinis capillaribus.**The capillary, prickled Chara.*

The root of this is a small tuft of fibres. Its stalks are numerous, procumbent, round, and geniculated; they are armed with a great number of long and slender spines, and are less brittle than those of the two former, though very easily broken. They do not grow to more than eight or ten inches in length, and are of a greyish-green colour; the leaves are very slender, oblong, pointed, and stand thick at the joints. The whole plant is procumbent, and of a greyish-green colour.

This species is found in many parts of Ireland, and in some of the western counties of England, but not about London. It grows in shallow waters with muddy bottoms. Vailant calls this, *Chara major caulis spinosis*. Bobart, *Hippuris muscosus caulis spinulis crebrius exasperatis*.

We have, beside these three species, 1. The six-leaved Chara, or gritty *Equisetum* of Gesner. 2. The little Chara, with very slender stalks and leaves; and, 3. The little, pellucid, flexible Chara, with very numerous seeds: all common in our ditches about London.

EQUISETUM.

EQUISETUM is a genus of plants, the parts of fructification of which are so little distinguishable, that its general structure is necessary to be called in to establish the character. Its root is long and creeping. The plant consists of stalks, in some simple, in others branched, or producing setæ, called by some leaves, but really

really of the same structure with the rest of the plant; in all hollow, and made up of several joints, or short tubes, inserted into one another like so many cups.

All we are able to distinguish, as to the fructification, is, that the parts of it are arranged into a kind of spike, of an oblong oval form, and are orbicular in figure, and peltated, and that they divide irregularly, and in various angles from the base. Many very eminent authors say that these flowers are produced on some plants, and, on others of the same species, seeds naked, or without capsules; but this arises from the error of confounding the charæ with the equisetæ, and supposing them to have male plants with spikes of flowers, which is not the case.

Most of the botanical writers have called the several species of this genus by the proper name of Equisetæ, but they have also, in general, comprehended under it the several species of two other distinct genera, the charæ and the hippuris.

1. *Equisetum durius caule nudo scabro.*

The hard, naked Horsetail.

The root of this species is long, slender, roundish, and creeping; of a dusky colour, and insipid taste. It creeps a long way under the surface of the earth, and sends up, at several parts, the plants. The stalk is simple, rounded, largest at the base, and gradually smaller to the top, where it terminates in an obtuse point. It is of a dusky purplish colour, inclining to blackness at the base, but, in all other parts, of a pale whitish green. It grows to two or three feet in height, usually, without the least rudiment of leaf or branch in any part, a mere straight, single column; its surface is deeply striated, and the whole stalk is composed of a number of short tubular joints, inserted into one another.

When in the state of fructification, the top of the stalk is terminated by an oblong oval spike, three quarters of an inch in length, and more than a third of an inch in diameter. This is brown, hard, and formed of little roundish peltæ: in this state, also, the plant sometimes poseth forth a kind of little leaves at the joints, toward the top of the stalk; and sometimes a single twig arises from some one of the lower joints, but this is more rare. The whole plant is extremely hard and harsh to the touch, and it continues fresh the whole year. It grows in wet, boggy places, in some parts of England, but more frequently in Germany. Our workmen use it very much in smoothing their works in wood, ivory, &c. they call it *Rush*, and *Shoregrass*; it will even take effect upon brass and iron. C. Bauhine calls it, *Equisetum foliis nudum, non ramosum, five junceum*.

2. *Equisetum caule crasso, verticillis densissimis, setis simplicibus.*

The thick-stalked Equisetum, with very thick-set, simple setæ.

This is a very stately plant, and is by much the largest of the Equisetum kind. Its roots are fibrous, and spread horizontally, under the surface of the ground. From these, in several places, rise the stalks; they grow to be three, four, or five feet high, and of near half an inch in diameter. They are round, hollow, and white in colour, and are composed of a number of short tubular joints, inserted into one another. They are smooth on the surface, or, at the utmost, so lightly striated, that it is scarce discernible. At every joint of the stalk there grow a vast number of setæ; these are green, of the thickness of a packthread, striated, and not branched, but composed of joints, in the manner of the main stalk; these are nine or ten inches long, and from twenty to thirty of them are produced at every joint, so that the whole plant makes a very beautiful figure. It is not uncommon to see a thousand, or more, of these plants growing together, in which case they make a very singular and very pretty appearance. The stalks, as they grow old, often lose their white colour, and turn of a dusky blackish-purple, especially on the side next the sun.

We have this species in our woods, and in other wet places, not unfrequently; where it produces its fructifications, they stand on naked stalks, in large oval spikes. C. Bauhine calls this, *Equisetum palustre longioribus setis*; others, *Equisetum palustre majus*.

3. *Equisetum*

3. *Equisetum fetis simplicibus internodia vix superantibus.*
The short and single-branched Equisetum.

The root of this species is of the thickness of a packthread, jointed, and creeping. It runs a vast way under the surface, and sends down fibres, in considerable numbers, at every joint. It's stalks are green, slender, and very deeply striated. From every joint there grow six, eight, or ten setæ, green like the stalk, and, like it, composed of several tubular joints, fitted into one another. These setæ are short, scarce longer than the joints of the main stalk. When the plant flowers, the spike stands not upon a naked stalk, as in most, but on the top of the perfect plant. It is not unfrequent with us in rotten, boggy ground. C. Bauhine calls it, *Equisetum palustre brevioribus fetis*; others, *Equisetum palustre minus*.

There are, beside these species, 1. The soft-stalked, naked Horsetail. 2. The corn-field Horsetail, with long setæ, sometimes sending out secondary ones. 3. The small, naked, variegated, Brazilian Horsetail; this grows also in England. 4. The wood Horsetail, with very slender, ramose, setæ. 5. The marsh Horsetail, with very long and very slender setæ. 6. The little, marsh Horsetail, with short setæ, and numerous heads. 7. The marsh Horsetail, with very long, slender setæ. 8. The branched, rusty Horsetail.

FICUS.

FICUS is a genus of plants, differing, as has been supposed, from all others, in that it's parts of fructification are inclosed within the body of what we call the fruit. Microscopic observations, however, have shewn us many parallel instances among the fungi, delivered in their proper place. The Ficus produces both male and female flowers separate, and in the different parts of the fruit, the outer part of which is properly the common calyx.

This is large, fleshy, of a turbinated figure approaching to oval, hollow, and close with numerous serrated and crooked squammule of a semi-lanceolated figure. The inner surface of this cup is every-where covered with floscules; the exterior ones, or those nearest the margin of the calyx, are the male flowers, and are few in number; the others are female ones, and are much more numerous.

The male flowers stand each on it's own peduncle: the cup is a perianthium, erect, divided into three, four, or five parts, lanceolated in figure, equal in size, and erect. There is no corolla. The stamina are three filaments, slender, and of the length of the cup. The anthers are double: there is among these a crooked and perishing rudiment of a pistil.

The female flowers also stand each on it's own separate peduncle; in these the calyx is a perianthium, divided into five lanceolated-pointed segments, nearly equal in size, and erect. There is no corolla. The germen of the pistil is oval, of the size of the perianthium. The style is subulated, bent, and grows from one side of the germen, not from it's point. The stigmata are two in number, both bent back and pointed, but one longer than the other. There is no pericarpium to this flower, but the cup contains the seed, which is single and roundish.

1. *Ficus foliis palmatis.* **The Fig-Tree.**
The Fig-tree, with palmated leaves.

This grows to fifteen or twenty feet high, and sends out a number of long and large branches, naturally spreading a great way. It's trunk is as thick as a man's thigh, or more, and does not rise erect, but is usually tortuous. It's bark is smooth, while it is young, but, in the old branches and trunk, somewhat rough. The wood is white, soft, and scarce fit for any use. The leaves are very large, and of a palmated figure, divided into five parts: they are rough to the touch, and of a deep green colour. The fruit, in which are contained all the parts of fructification, arises near the setting on of the leaves; it is green, at first, but purplish, when ripe, and full of large roundish seeds. The unripe fruit, or the tender bark, or young leaves, wounded, emit a milky juice of an acrid and bitter taste. The whole fruit in this tree is properly the common calyx of the fructification.

M m

This

This Fig-tree is a native of Italy, Spain, and many parts of the East. With us it is cultivated in gardens, and thrives perfectly well in the open air, unless a very severe winter happen.

It is singular, in regard to this tree, that the fruit, in general, contains both male and female flowers, and yet some trees of the same species contain in their fruit only male flowers, and others only female ones.

Botanical writers, who have not been aware of this, have described these *lusus nature*, in the same species, as two separate ones; the male quite distinct from the common Fig-tree, though, in reality, it is no more than the extraordinary state of that tree.

The Fig-tree with only male flowers in the fruit is called, by C. Bauhine, and others, *Caprificus* and *Erinosyche*; by Pontedera, *Caprificus præcox fructu nigricante, parvo, deciduo*. They agree to call that with only female flowers, *Ficus communis*, as well as the hermaphroditic kind. The Greeks tell us strange things of what they call the caprification of Fig-trees: they affirm, that, unless the fruit of the *Caprificus* be hanged on the branches of the common Fig-tree, it's fruit will not ripen, but decay and fall off. We had been used for a long time to wonder at, if not to laugh at, this account; at length, Tournefort, travelling over the part of the world where the people lived who wrote of it, found the practice not only still continued, but absolutely necessary: he attributes the ripening of the figs, by means of this caprification, or hanging the fruits of the *Caprificus* on the branches, to the puncture of certain insects, bred in those fruits; but this is unphilosophical: a better account of the effect is obvious enough. The Fig-trees cultivated in that part of the world are such as produce only female flowers; the fruit of the *Caprificus*, thus hung upon their branches, produces only male flowers, and, Mr Tournefort tells us, it is open at the bottom, at the time it is hung on these trees: it is easy to see, therefore, that the ripening of the figs, after this process, is not owing to the punctures of insects, but to the supply of that male farina which they before wanted. The fact is obvious, though the manner in which it is effected is not so perfectly understood.

The other species of the Fig-tree are, 1. The hard-leaved Fig, with robust, erect branches. 2. The dwarf Fig, or *Chamaeficus*. 3. The Malabar Fig, with cuspidated leaves, and small, round, double fruit. 4. The roundish-leaved Bengal Fig, with orbicular fruit. 5. The small, round, white-fruited Fig. 6. The oblong, bluish-fruited Fig. 7. The mulberry-leaved Portugal Fig. 8. The Goa Fig-tree, with quince-like leaves, and a small fruit. 9. The American, chestnut-leaved Fig, with a small, spotted, round fruit. 10. The great, citron-leaved, American Fig-tree, with a large, umbilicated fruit. 11. The bay-leaved American Fig-tree, with very large fruit. 12. The dactyloide American Fig, with leaves silvery underneath: and, 13. The Cyprian Fig of J. Bauhine: or, The wild Fig, with an undivided, lightly serrated leaf.

Beside these, which are distinct species of the *Ficus*, Tournefort has mentioned a great many others as such, which are truly no more than varieties, and their difference chiefly in the colour of the fruit. The white, the green, the red, the purple, the yellow, and the black Fig are of this kind, all raised, by culture, from the first species, and influenced by it, sometimes, to change their shape, as well as colour, though the leaves and every other part of the tree remain unaltered.

OPHIOGLOSSUM.

OPHIOGLOSSUM is a genus of plants, no part of the fructification of which is visible, except the fruit. This is an oblong, double, or distichous capsule, divided, by a great number of transverse articulations, into many cells, each of which, when mature, opens transversely, and is found to contain a great number of small seeds, of a subovate figure.

1. *Ophioglossum fronde ovata.*
The ovated-leaved *Ophioglossum*.

Adder's-tongue.

The root of this little plant is a large tuft of fibres, thick, and sufficiently long; the taste of them is sweetish at first, but afterwards acrid and bitterish. From this root there

there rises a single pedicle of three or four inches long, green and succulent; this supports a single leaf of an ovated figure, with no visible nerves or veins in it, very thick and fleshy, and of a beautiful bright green; this is sometimes shorter and rounder, sometimes longer and narrower. From the insertion of the pedicle rises the peduncle, sustaining the fructifications; these are arranged into a long common capsule, an inch and half, or more, in length, and a fourteenth of an inch, or not much more, in diameter; this terminates in a point, and is serrated as it were at both edges.

This is a native of England, and is common enough in damp pastures; it rises in April, and remains till June, when the whole plant decays, except the root, which lies deep, and is perennial. Caspar Bauhine describes what he calls three species of *Ophioglossum*; 1. The common one now described; 2. An angular-leaved one; and, 3. A roundish-leaved one. Mentzel describes three species also, beside the common one: 1. A large, acute-leaved one, with a double tongue. 2. A middle-sized, obtuse-leaved one, with a double tongue; and, 3. A very small, double-tongued kind. These, however, are no more than varieties of the common *Ophioglossum*, the capsule or spike of which is often bifid, and the leaves, as already observed, vary greatly in length and breadth. All Europe, so far as is yet known, affords only one species of *Ophioglossum*; but, in America, there are two distinct species, beside the common European kind. I have received both from Pennsylvania. Plumier also has described both: the first is the reticulated, heart-shaped, leaved *Ophioglossum*; the other, the palmated *Ophioglossum*; both evidently real distinct species.

Tournefort makes eight species of *Ophioglossum*, but he does it by taking the varieties of C. Bauhine and Mentzel for species.

Ophioglossum has long been famous as a vulnerary, but it is more used by the good women in the country than in the shops. An ointment is made of it, with lard or butter; and its juice, or the powder of the dried leaves, is given internally.

OSMUNDA.

OSMUNDA is a genus of plants, of which no part of the fructification is distinctly visible, except the fruit. This is a globose, distinct capsule, many of which are arranged together in clusters, and which, when mature, open horizontally, and are found to contain a great number of very minute seeds, of an ovated shape.

1. *Osmunda scapo paniculato polyphylo.*
The paniculated, many-leaved Osmund.

Osmund Royal.

The root of this species is composed of a vast number of thick fibres, variously implicated and interwoven, very long, and of a black colour. From this arise several stalks; each grows to three or four feet high, and is round, smooth, striated, and of a green colour in the tenderer parts. The stalk divides into several branches, on each of which there stand eight, nine, or ten pair of foliola, making a pinnated leaf, terminated by an odd foliole at the extremity. The folioles are not serrated at the edge; they are of a pale green colour, and have an almost infinite number of very small and fine veins in them. The upper part of the common pedicle, or stalk, is divided into a number of ramifications of an inch or two in length, which are covered with a vast number of capsules of seeds.

This species is a native of England, and is not uncommon on our boggy grounds, and in damp woods. Tournefort calls it, *Osmunda vulgaris*; and C. Bauhine, *Filix ramosa, non dentata, florida*.

2. *Osmunda frondibus pinnatis foliolis semipinnatifidis, scapo nudo disticbo.*

The pinnated Osmund, with semipinnatifid leaves, and a naked, distichous scapus.

This is an extremely elegant fern; it grows to eighteen or twenty inches in height. Its root consists of a vast cluster of intricately interwoven black fibres, considerably thick, and of a very disagreeable taste. Four or five plants of it usually arise from

from each root. Each plant consists of a single leaf, the petiole of which rises naked for five or six inches; it then sends off a number of branches, and each of these is furnished with a double series of oblong leaves, or foliols, between every two of which there runs a small, narrow membrane. The stalk toward the top has a long and deep furrow running all the way up it; the upper part of it is very thickly beset with seed-vessels. The foliols are all of them narrow, but most of all those which have seed-vessels on them, the edges of all these turning inwards.

This is a native of many parts of Europe and America, but not of England. It thrives very well in the late Lord Petre's garden. Ray calls it, *Lonchites Norwegica major*, App. 68. C. Bauhine, *Filix palustris altera fusco pulvere hirsuta*, Pin. 358. Ammon, *Filicestrum septentrionale et palustre*, Rut. 175. Thalius, *Strictheopteris*, Herc. 119, and Muntingius, *Strictifera*, Phyl. 291. It is frequent in Norway and Denmark, and in the northern parts of Russia.

3. *Osmunda scapo caulino unico fronde pinnata solitaria.* Moonwort.
The single-stalked Osmund, with a single, pinnated leaf.

This is a very singular and very beautiful plant. It grows to six or eight inches high. The root is fibrous and perpendicular, black on the outside, and yellow within; from this rises a single pedicle, which grows up naked to three or four inches, and is round, and moderately thick: at about this height grows a single pinnated leaf, of an inch and half long; it is composed of four or five pairs of foliols, with the end terminated by an odd one; each of the foliols is narrower at the base, and from thence extends into a kind of semicircular figure, so as to represent a half-moon. These leaves are thick, succulent, and fleshy, with no visible fibres. From the ala or insertion of this leaf grows a stalk of an inch and half, or more, in length. From the sides of this arise peduncles covered with seed-vessels, and making a very elegant appearance.

This species is a native of England, but it is not common. I have found it on Lincoln-heath, and in some other places. C. Bauhine calls it, *Lunaria racemosa minor et vulgaris*. Tournefort, *Osmunda foliis lunatis*.

Authors have described no less than five species of this plant, under the name of *Lunaria*. C. Bauhine describes one under the name of *Lunaria minor rutaceo folio*, Pin. 355. Breynius, another under the name of *Lunaria racemosa minor matricariae folio*, Cent. 184; and Morison, a third under the name of *Filicula sive adiantum foliis inferioribus coriandri, ceteris rutae murariae sive famariae*, Hist. 3. p. 585; and, finally, Breynius, another under the name of *Lunaria racemosa minor adianti folio*, Cent. 1. 93.

All these, however, are no more than varieties of the common kind, as appears both from specimens of them, and even from the descriptions of the authors themselves. If we could reduce the varieties to their proper species, through the whole history of plants, as easily and as certainly as may be done in case of this species, how much would the vast number of supposed species, at present described by authors, be reduced? From more than seventeen thousand, 'tis a question, whether there would remain ten thousand?

The other species of Osmund really distinct are; 1. The hairy, spleenwort-leaved, American Osmunda. 2. The great, fern-leaved, American Osmund. 3. The hart's tongue-leaved Osmund. 4. The crenated-leaved Osmund. 5. The deeply lacinated and lightly-hairy Osmund. 6. The asphodel-rooted Osmund. 7. The verticillate Osmund; and, 8. The lanceolated and lightly ferrated Osmund. Almost all these are of American origin, and are described by Plamier.

The common Osmund has the credit of being an excellent vulnerary, and a cure for the rickets.

P T E R I S.

PTERIS is a genus of plants, in which the fructifications are disposed in form of a line, surrounding the edges of the lower side of the leaves.

1. *Pteris fronde supradecomposita, foliolis pinnatis, pinnis lanceolatis, infimis pinnatifidis, superioribus minoribus.*
Decomposed, pinnate, small-leaved *Pteris*.

Female
fern.

The length of this specific name, incapable of being shortened by Linnaeus, and acquiesced in by Van Royen, and all that have followed him, may serve to shew how very intricate a class of plants the ferns are, and how difficultly distinguishable from one another. The root of this species creeps under the surface to a vast distance. The plant arises to four or five feet high. The stalk is naked to three feet, or thereabout; it is hollow, tender, and green: at this height it sends out a number of branches, which divide themselves into others, and those yet again into others. The foliola, which invest these, are small, and even at the edges, obtusely pointed, and arranged in the pinnated manner, a single or odd leaf closing the end of the pinna. The foliola are green on the upper side, and greyish underneath. This species is too common both in England, and every other part of Europe; our common people call it Brakes; and the botanical writers, Female fern. C. Bauhine calls it, *Filix ramosa major pinnulis obtusis, non dentatis*.

2. *Pteris fronde pinnatifida lanceolata laciniis parallelis integerrimis.*

The pinnatifid, lanceolated *Pteris*, with parallel lacinie.

Rough
Spleen-
wort.

This is a very elegant plant, and extremely different from the former species in it's general form, though perfectly like it in it's generical character. It's root is composed of a vast number of fibres, collected into a tuft; they are black on the outside, and whitish within; from this arise a vast number of leaves, fifty or more in a cluster. Each of these is an entire plant, it grows to a foot in height; the stalk is black at the bottom, and green higher up; the leaf begins to expand at about four inches from the base, and is one single pinnated one, broadest near the middle, and terminating in a point. The segments or lobes stand horizontally, and are very different from one another in shape. Those on the lower part of the leaf are broad, and obtuse, like those of the common asplenium; the others, up to the top of the leaf, resemble those of polypody, but are longer, narrower, and pointed at the ends. The longest of these segments is scarce an inch in length, and they are all entire and undivided at the edges. The leaves which produce the seeds usually rise in the midst of a cluster of these, and their segments appear longer and narrower than those of the others; but this is merely owing to the fructification.

This species is a native of England; and in France, and almost every other part of Europe, it is very common. It has generally been esteemed a species of polypody or lonchitis, but erroneously. C. Bauhine calls it, *Lonchitis minor*, Pin. 359. *Carnearius*, *Lonchitis aspera minor*, Epit. 669. Haller, *Struthiopteris*. Tournefort calls it, *Polypodium angustifolium, folio vario*, 540.

The common female fern is esteemed an excellent medicine in cases of worms; and the latter species is not less celebrated, as a vulnerary: but at present they are neither of them used in the shops.

LONCHITIS.

LONCHITIS is a genus of plants, the fructifications of which are arranged into lunulated series, and disposed separately under the sinus's of the leaves.

1. *Lonchitis petiolo strigosiore spinoso.*
The *Lonchitis*, with a slender, prickly stalk.

The root is black, fibrous, and tough; the stalks are numerous, slender, rounded, but with a furrow in the front, and surrounded with weak prickles of a glossy black. The plant grows to a foot and half high: the stks, which arise from the main stalk, are usually simple; sometimes they send off others near their bases; they are each

N n

formed

formed of a single pinnatifid leaf. The segments are deep, the whole leaf broad and thin, and of a fine green; the seeds are arranged into little clusters of a lunated figure, and white colour, placed at the base of the sinuations, one to each. It is a native of Martinico. Plumier calls it, *Filix latifolia spinulis mollibus et nigris aculeata*.

2. *Lonchitis petiolo crassiore villosa.*

The thick and hairy-stalked Lonchitis.

The root is long and thick, knotty, and furnished with thick fibres. The plant rises to seven feet high: the stalk is an inch thick, round, but furrowed in the front, and hairy. The leaves are pinnatifid, five inches long, and about two broad, at the bottom. The segments are large, rounded, and crenated at the edge: they somewhat resemble the figure of the leaves of the oak. The seeds are arranged into lunated clusters, placed separately at the bases of the sinuations of the pinnae. It is a native of Martinico, and grows near waters. Plumier calls it, *Filix villosa pinnulis quercinis*.

ADIANTUM.

ADIANTUM is a genus of plants, the fructifications of which are collected into clusters, in form of oval spots, and placed on the under part of the tops of the leaves, or of the extremities of the segments, both which are always where the seeds are found, curled inwards.

1. *Adiantum fronde duplicato-pinnata foliis semiorbiculatis sinuatis.*

The duplicate-pinnated Adiantum, with semiorbicular sinuated foliola.

True Maiden-hair.

This is a very beautiful little plant; it grows to six, eight, or ten inches high. The root is fibrous, and variously implicated, black on the surface, and white within; from this rise several stalks together. They are very slender, black, and of a shining surface; they grow up to half their height naked, but from that part to the top they send out on each side several pinnae, or small branches: these are not more than an inch or two in length, and are placed alternately at some distance on the main stalk. Each of these is regularly pinnated; there are about four foliola on each side, and one odd one at the end. These foliola are affixed to short petioles, and are of a semiorbicular figure, sinuated at the edges, and the segments, or short lobes formed by the sinus's, are roundish. The whole leaf or foliole is of a pale green colour, smooth on the surface, and soft to the touch.

This species is not a native of England; but in many places in France, and in other parts of Europe, it is common enough. J. Bauhine calls it, *Adiantum five capillus Veneris verus*, 3. 751; and C. Bauhine, *Adiantum foliis coriandri*; others, *Capillus Veneris verus*.

2. *Adiantum fronde ramosa diffusa.*

The branched, diffuse Adiantum.

American Maiden-hair.

The singular manner of growing in this plant is so obvious a distinction from all the other species of this genus, that scarce any thing more than it's name is necessary to distinguish it from all the rest. It is an extremely elegant plant. It's root is composed of a cluster of long black fibres, variously interwoven one with another; from this arise several plants together, five, ten, or more, in a cluster.

The stalk is round, of the thickness of a packthread, and of a fine shining black colour. This rises single to about six or eight inches high; at this height it immediately divaricates into two or three main ramifications, and, each of these immediately dividing into three or four more, the whole top of the plant forms itself into a ramose head: the several branches separate very widely from one another; some of them are erect, or nearly so; many horizontal, and some dependent; each extreme subdivision is from an inch to three inches in length, and elegantly pinnated. The foliola are of a very singular figure, oblong, obtusely pointed, straight on the lower edge, and rounded

rounded and sinuated on the upper; they do not stand in pairs, but alternately, on very short pedicles, and a single or odd leaf closes the extremity of the branch.

This species is a native of North America, but it succeeds very well in our gardens. The description here given of it is formed on one of the plants growing here: in Canada it grows to four or five feet high, and branches out in an extremely elegant manner. C. Bauhine calls it, *Adiantum fruticosum Brasiliense*, Pin. 355; and Cornutus, *Adiantum Americanum*, 7.

The other species of *Adiantum* are, 1. The red-stalked Scottish *Adiantum*; this was first found by Sibbald, who improperly divides it into two species, a larger and a smaller. 2. The little, pellucid, English *Adiantum*, with bifid or trifid leaves. 3. The hexagonal-leaved *Adiantum*. 4. The triphyllous, obtuse-leaved *Adiantum*. 5. The Italian *Adiantum*, with multifid leaves. 6. The stelliform Chinese *Adiantum*. 7. The lichen-leaved *Adiantum*. 8. The creeping, shrubby, prickly *Adiantum*. 9. The finely divided *Adiantum*. 10. The capillaceous *Adiantum*. 11. The climbing *Adiantum*, with finely divided, obtuse leaves. 12. The extremely-branched, obtuse-leaved *Adiantum*. Most of these species are American, and not known to the world, otherwise than as described by Plumier, amongst his American ferns.

The first described species is the *Adiantum verum* of the shops: it is a famous pectoral, and makes a very pleasant syrup, called *Capillaire*; but an infusion of it, in manner of tea, succeeds better.

ASPLENIUM.

ASPLENIUM is a genus of plants, in which the fructifications are arranged into clusters, disposed in form of stria lines, and are placed under the disk of the leaf. This genus includes the *Asplenium*, *Lingua Cervina*, and *Trichomanes* of authors, the fructifications of all the species of every one of these supposed distinct genera being arranged in this manner.

1. *Asplenium fronde pinnatifida, laciniis alternis, adnatis.* Smooth
The pinnatifid-leaved *Asplenium*, with alternate laciniæ. **Spleenwort.**

This is a very small, but a very singular, plant. Its root is composed of a cluster of slender black fibres. From this arise ten, twelve, or more leaves, standing very close to one another. They are, at full growth, about three or four inches long, and half an inch, or a little more, in diameter. Every leaf is a complete plant: the pedicle arises naked a little way, but thence to the top it is pinnatifid. The lobes are small and short; they stand alternately on the stalk, and adhere, by their own broad base, without any pedicle. They are of a pale green colour, thick and succulent, and hairy on the under side; the extremity is closed by an odd foliole or segment. The lobes which form this leaf are not distinct and entire, as the foliola in many of the ferns, but they seem only segments of one general leaf.

This species is frequent in England on old walls, and in other barren places. C. Bauhine calls it, *Ceterach officinarum*, p. 354. J. Bauhine, *Asplenium*, five *ceterach*, 3. 749.

2. *Asplenium frondibus linearibus, integris, basi cordatis, inflexis, petiolis hirsutis.* Hart's
The linear-leaved *Asplenium*, cordated at the base with hairy Tongue.
pedicles.

The root of this species is composed of a multitude of long, slender, black fibres. The plants arise ten, twelve, or more, in a cluster. Each consists of a single, undivided leaf on its proper pedicle. The pedicle is black, hairy, and two or three inches long. The leaf is cordated at the base, and terminates in a point; it is six or eight inches long, and about an inch and half in breadth, of a fine green colour, and glossy surface; at the back of the leaves the fructifications stand in thick, short, oblique lines.

This species is very common in England in old wells, and other damp, shady places. C. Bauhine calls it, *Lingua cervina officinarum*. J. Bauhine, *Phyllitis five lingua*.

lingua cervina. Almost all the botanical writers have described it; and many of them, several times over, under the name of many distinct species. We are told of, 1. a *Lingua cervina maxima undulato folio arniculato per basin*. 2. A *Lingua cervina foliis in summo multifidis*. 3. A *Lingua cervina folio undulato crispo*; and 4. of a *Lingua cervina folio diviso crispo undulato*: but all these, and four or five others recorded as distinct species by Tournefort and others, are no more in reality, than varieties of the common hart's tongue described here, which sometimes grows larger, sometimes smaller, and has it's leaves sometimes divided at the top, sometimes curled at the edge.

3. *Asplenium fronde pinnata, foliolis subrotundis crenatis.* **English**
The pinnated Asplenium, with roundish, crenated foliola. **Waldenhair.**

This is a very beautiful little plant. It's root is composed of a cluster of slender black fibres; from this there rise a great number of the plants together. Each plant is simple and pinnated: the stalk is round, slender, black, and of a very glossy surface; it grows up naked, for an inch or two; after this it is, to the extremity, beset with a double series of beautiful folioles. The whole plant is usually five or six inches long, sometimes more. The foliola are of an oval figure, rounded at the end, and adhere to the stalk without any pedicle; they stand opposite, or nearly opposite, to one another, and the extremity of the stalk is terminated by a single leaf or foliolum. They are of a fine bright green colour, and smooth surface. The stalk is brittle.

This species is very frequent in England on old walls, and in other shady places. C. Bauhine calls it, *Trichomanes five polytrichum officinarum*, p. 356. J. Bauhine, *Trichomanes five polytrichum*, 3. 754; and others, *Trichomanes mas*, and vulgar.

The leaves or foliola of this species are sometimes even, sometimes serrated at the edges; and the plant grows sometimes larger, sometimes smaller, and is sometimes simple, sometimes divided into two or more parts at the extremity, like the *Phyllitis*.

Authors have described these several varieties of this species under the names of so many species. The *Trichomanes foliis eleganter incis*, of Tournefort; the *Trichomanes minus et tenerius*, of C. Bauhine; and the *Trichomanes ramosum* of the same, and other authors, are no other than the varieties of this species.

4. *Asplenium frondibus alternatim decompositis, foliolis*
cuneiformibus crenulatis. **Wall Rue.**
The Asplenium, with alternately decomposed branches,
and crenated, cuneiform leaves.

This is one of the smallest of the fern-kind. It's root is composed of several fine and small black fibres, variously interwoven one with another. From this arise a great number of stalks or separate plants; these are seldom more than two inches in height, often not much more than an inch. The stalks are dusky coloured, or blackish, near the root, but higher up they are of a paler green; they are divided, toward the top, into many ramifications, and at the extremities of these, and on their sides, stand little leaves, in some degree, resembling those of the true *Adiantum* of the shops. The whole plant together has been supposed to resemble a leaf of rue, whence it's common name *Ruta muraria*. The leaves are thick and rigid, obtuse at the extremities, and crenated: they are of a pale green on the surface, and brownish underneath.

This species is frequent on old walls in England, and elsewhere. C. Bauhine calls it, *Ruta muraria*, p. 356. *Tabernamontanus*, *Adiantum album*, 796.

5. *Asplenium frondibus duplicato-pinnatis foliis inferioribus* **Black**
majoribus, foliolis obverse ovatis, superne crenatis. **Walden-**
The ramose Asplenium, with cordated foliola. **hair.**

The root of this species is composed of a cluster of black and considerably thick fibres; from this there rise usually six or eight leaves together. The pedicle is rigid, hard, and of a black colour, and shining surface; it grows up naked to five or six inches high, and then it sends off a number of branches, which stand regularly over-against

against one another, so as to give the whole compound leaf a kind of triangular form, by their growing shorter all the way toward the top. These branches are pinnated on each side: the pinnules or foliola are deeply sinuated, and sometimes they are subdivided into others; they are broadest at the lower part, and terminate in a point. The whole upper surface of the leaf is of a dark green colour, the under side is paler. This species is very frequent with us in woods, and other shady places, about the stumps of trees. C. Bauhine calls it, *Adiantum nigrum foliis longioribus pulverulentis pediculo nigro*, p. 355. J. Bauhine, and others, *Adiantum nigrum officinarum*.

This genus is a very extensive one. Every one of these five species has been made by most authors a peculiar genus, and several species are referable to each. Of the Ceterach-kind; there are, 1. The ramose Ceterach. 2. The tall, hairy Ceterach. 3. The procumbent Ceterach, with undulated leaves.

Of the Lingua Cervina kind, beside the varieties erroneously described as species, there are a vast number of really distinct ones. Plumier has described more than sixty distinct species, beside varieties only of American origin; and we have some others in Europe. The principal and most singular are of the European kind: 1. The spinose Lingua Cervina. 2. The serrated Lingua Cervina. 3. The oak-leaved Lingua Cervina. Of the American: 1. The climbing, ilex-leaved Lingua Cervina. 2. The little, creeping, hairy Lingua Cervina. 3. The round-leaved Lingua Cervina. 4. The narrow-leaved Lingua Cervina, taking root at the ends of the leaves. 5. The bay-leaved, serrated Lingua Cervina. 6. The scandent, citron-leaved Lingua Cervina. 7. The ensiform, serrated Lingua Cervina. 8. The marginated Lingua Cervina.

Of the Trichomanes kind, beside the varieties already mentioned, there are several distinct species: 1. The aculeated-leaved Trichomanes. 2. The triangular, crenated-leaved Trichomanes. 3. The cordated-leaved Trichomanes. 4. The soft, pendulous Trichomanes. 5. The silvery Trichomanes.

Of the Ruta Muraria kind are, 1. The Ruta Muraria, called the curled, florid *Adiantum* of Swenckfeldt. 2. The tall Ruta Muraria, with narrower leaves. 3. The tall, various-leaved, climbing Ruta Muraria. 4. The thin-leaved, serrated Ruta Muraria, a species not described, which I met with, many years since, on old walls, near Shepton Mallet.

Of the *Adiantum Nigrum* kind are, 1. The hemlock-like, black Maidenhair. 2. The black Maidenhair, with round segments. 3. The narrowest-leaved, black Maidenhair.

HEMIONITIS.

HEMIONITIS is a genus of plants, the fructifications of which are arranged into lines, sometimes branched, often uniting with and intersecting one another.

1. *Hemionitis frondibus lineari-lanceolatis integris.*

The Hemionitis, with undivided lineari-lanceolated leaves.

The root is oblong, thick, knotty and creeping, of a greenish colour, succulent and fibred. The plant consists of a single leaf, of an oblong, narrow, and linear form. It's length is a foot and half, and it's greatest breadth not more than an inch: it is very narrow at the base, and terminates in a long and narrow point at the extremity; it's colour is a pale green, it's consistence firm. The seeds are arranged in long series or lines, uniting with, and intersecting one another in several places, so as to form a kind of chain of oblong links, all along the two sides of the rib of the leaf. There usually grow several plants from the different parts of the same root: their pedicles are very short, and are tuberous at the bottom. It grows about the roots of trees in the Caribbee Islands. Plumier calls it, *Lingua cervina angustifolia reticulata*.

2. *Hemionitis frondibus palmatis petiolis hirsutis.*

The palmated-leaved, hairy-stalked Hemionitis.

The root is composed of numerous, slender, rigid, black fibres: the stalks are numerous, hairy, slender, and three, four, or five inches long; they are naked to the

top, where there stands a palmated leaf of two or three inches long, and as much in diameter: it is divided into five oblong segments, broadest at the base, pointed at the extremity, and crenated round the edges. Not unfrequently, when the plant is full grown, a young leaf, divided only into three segments, arises from a fissure in the old ones. The seeds are arranged in beautiful reticulated series on the back of the leaf. It is a native of many parts of North America. Plumier calls it, *Hemionitis aurea hirsuta*. Sir Hans Sloane, *Hemionitis folio hirsuto et magis dissecto seu ranunculi folio*. The whole leaf is indeed hairy, but much less so than the stalk.

POLYPODIUM.

POLYPODIUM is a genus of plants, the fructifications of which are arranged together into round spots, and placed on the under side of the disk of the leaves.

This genus includes the *Polypodium* and the *Lonchitis* of other authors, excepting for some species which they have arranged under these genera, which do not properly belong to them, such as the pinnatifid *Pteris* before described, which Tournefort has made a *Polypody*, and C. Bauhine a *Lonchitis*, but which properly is neither.

1. *Polypodium fronde pinnata, pinna lanceolatis, indivisis, ferrulatis, alternis connatis-sessilibus.* **Common Polypody.**
The lanceolated and ferrated-leaved Polypody.

The root of this species is as thick as a man's finger, very long, and runs horizontally along the surface of the ground; it is of a dusky colour, and hairy, and full of tubercles, from which it sends out little clusters of fibres. From this root, at several distances, there arise the leaves or distinct plants: each grows to be about a foot, or somewhat more, in height. The pedicle is naked for about five inches, and from thence to the top stand the pinnae; they are largest at the bottom, and smaller all the way to the top; they are about an inch in length at a medium, and about a third of an inch in breadth, of a dark green colour, and, when in the state of fructification, beautifully spotted, with yellow dots underneath.

This species is frequent with us on old walls, and under shady hedges. C. Bauhine, and most of the other writers, call it *Polypodium vulgare*.

The pinnae, in this species, are usually a little notched; when the plant grows in damp places, they are scarce at all so; when in dry ones, they are somewhat deeply ferrated; from this variety, Petiver, Ray, Barreliere, and some others, have made two species; 1. The common *Polypody*; and, 2. The *Polypody of the wall*, with ferrated leaves.

2. *Polypodium fronde pinnata, pinna lineari-lanceolatis.*
The pinnated Polypody, with lineari-lanceolated pinnae.

This is the most pompous and elegant of all the *Polypodies*. It grows to three or four feet high. Its root is an inch in diameter, and creeps just under the surface of the earth to a great distance. The stalk is round, of a pale green colour, rigid and firm; it runs up naked to the height of two feet, from that to the top. It is regularly pinnated. The pinnae are longest and largest at the bottom, and smaller all the way up. The lowest of them are eight or ten inches long, and near two inches broad; they are of a pale bluish-green colour. The fructifications make large and beautiful round, yellow dots on the under parts of the disk of the pinnae.

This species is a native of America. Lord Petre had it in great perfection in his garden. Plumier, and others, have described it under the name of *Polypodium majus aureum*.

3. *Polypodium fronde duplicato-pinnata, foliis obtusis, crenulatis, petiolo strigoso.*

The duplicato-pinnate Polypody, with obtuse, crenated leaves, and slender stalks.

Male Fern.

This is a very common plant; it rises to two feet, or more, in height, and, in the broadest part, is often near a foot in diameter. Its root is thick and tuberous; its stalks, when they first appear, are naked of leaves, but hairy, and very oddly contorted. They are brittle, greenish, and covered, toward the base, with a chaffy matter. The leaves are beautifully pinnated: on the ribs which issue from the stalks, the pinnae stand alternately, not in pairs, and they are placed at a greater distance than in many other of the species. They are of a dusky green colour, and are spotted on the under part of the pinnae, in the same manner as the common Polypody, when in the state of fructification. This species is very common with us, under hedges, and in woods. C. Bauhine calls it, *Filix ramosa, non dentata*. Most of the authors have called it, *Filix mas vulgaris*, the common male Fern.

4. *Polypodium duplicato-pinnatum, foliis ovato-acutis crenulatis.*

The duplicately-pinnate Polypody, with ovated, acute, and crenulated leaves.

Dryopteris.

The root of this species is composed of a number of long flagellæ, which creep just under the surface, or even upon it, and intangle variously with one another. They are of the thickness of a goose-quill, and six, eight, or ten inches long: they are black on the outside, whitish within, and of an austere taste, with some sweetness. From the several parts of these flagellæ there are sent great numbers of capillary fibres into the ground. The plants also arise, at different distances, singly, or two or three together. It grows to six or eight inches high; the stalk rises naked, three or four inches: it is greenish and slender. From this part to the top it is duplicately pinnated: it sends off, on each side, several stalks, or pinnae, which are themselves also pinnated, or beset with small leaves, placed opposite to one another, in pairs, and adhering to the stalks by a broad base: there are eight, nine, or ten pair of these on the lower pinnule, but fewer on the upper ones, as they grow smaller and shorter all the way up: every pinnula has an odd leaf at the end. The stalk is flat on the anterior surface, rounded behind, and is smooth and brittle. The leaves are of a pale whitish, or yellowish-green, and are very thin and tender.

This species is frequent in the boggy parts of England, as in the Isle of Ely, &c.: J. Bauhine calls it, *Filix minor, non ramosa*. Ray, *Filix minor, palustris*, Hist. 1. 146. The generality of other authors call it *Dryopteris*.

The other species of Polypody are considerably numerous: of those usually called Polypodies by authors the principal are, 1. The sensible Polypody of Muntingius. 2. The lacinated Polypody of Wales. 3. The great, finely-divided, African Polypody. 4. The black, finely divided Polypody. 5. The pendulous, hairy, reddish Polypody. 6. The ostrich-feather Polypody. 7. The pelucid Polypody. 8. The serrated Polypody, with a blue root. Of those called by some authors Ferns, and by others *Lonchitis*, the principal are, 1. The greater, rough Spicewort, or *Lonchitis*. 2. The spinose, articulated Fern. 3. The narrower-leaved, closer-set, prickly, and articulated male Fern. 4. The smaller, prickly male Fern, called, by Ray, *Filix lonchitidi affinis*. 5. The male Fern, with narrow, deeply-serrated, and thin-set leaves. 6. The pale-stalked, brittle *Dryopteris*, with the lower axis bending downwards. 7. The dwarf, stone Fern, spotted with black dots. 8. The articulated *Lonchitis*, with dentated pinnules. 9. The smaller, round, crenated *Lonchitis*. 10. The betony-leaved *Lonchitis*. 11. The ramose *Lonchitis*, with dusty stalks. 12. The small, branched *Lonchitis*.

Of the *Dryopteris* kind are the small, fountain Fern of J. Bauhine, and a small, extremely narrow, pinnated kind, not described by any other author, a native of Pennsylvania.

The

The root of the common Polypody is much esteemed as a purge, and is an ingredient in some of the shop compositions. The root of the male Fern is greatly recommended by some against the rickets in children, and the leaves of the Dryopteris have the credit of being pectoral; they are sold in our markets under the name of White Maidenhair, and used as such in the shop compositions.

ACROSTICUM.

ACROSTICUM is a genus of plants, in which the fructifications are collected into clusters, and cover the whole under surface of the leaves.

Linnaeus, in his *Genera Plantarum*, makes this genus include the *Acrosticum* of authors, and the *ruta muraria* of Tournefort and others; but, in his *Flora Suecica*, &c. he arranges the *ruta muraria*, as we have done, among the species of *asplenium*. It is certain that the fructifications of the *ruta muraria* do, like those of the *acrosticum*, cover the whole under surface of the leaves; but they are not disposed in an irregular cluster there, but are formed into lines, as in the *asplenium*.

1. *Acrosticum fronde linear-laciniata.* *The linear-lacinated Acrosticum.*

This is one of the most singular plants we are acquainted with. Its root is composed of a vast number of capillary, blackish fibres; from this there arise a number of stalks, in a cluster often not less than forty or fifty together. The plant is about three inches high. The stalks are extremely slender, of a dusky colour toward the bottom, but pale upwards. Toward the top they are each divided into two or three segments, somewhat broader than the rest of the stalk, and covered with a dusty, ferrugineous-coloured powder. This is formed of the fructifications of the plant, and has much the appearance of that on the back of the leaves of the *ruta muraria*. The extremities of this plant usually are bent a little downwards.

This species is very common on the rocks in Germany, and we have it also in Scotland. It usually grows out of the fissures of stones, or from between the joints of old walls. C. Bauhine calls it, *Filix faxatilis corniculata*; and Tournefort, *Filicula faxatilis corniculata*.

The only species we know of this genus, beside that just described, is the tall, digitated *Acrosticum* of America, which Plumier calls *Filicula digitata*.

TRICHOMANES.

TRICHOMANES is a genus of plants, in which there appears a turbinated, erect calyx, standing singly on the very margin of the leaf, and a setaceous style terminating the capsule.

1. *Trichomanes fronde supra composita petiolo birsuto.* *The hairy-stalk, supra decampound-leaved Trichomanes.*

The root is fibrous and black. The plant rises to two feet high, or more; its main stalk is round, hairy, and of the thickness of a goose-quill; this divides into a multitude of ramifications and subdivisions, so that the whole extends to a foot, or more, in breadth: all these ramifications of the stalk are slender, round, and of a glossy black. The leaves stand alternately; they are an inch long, about a third of an inch broad, and of a lanceolated figure, deeply cut in on the edges: at the extremities of the several segments, which are all hollowed like a cup for that purpose; there stand a kind of capsules, covered by an operculum, from which there runs out a long rigid hair. It is a native of St Domingo. Plumier calls it, *Adiantum scandens ramossimum lacinis retusis dissectum*. It grows on the barks of old trees.

2. *Trichomanes fronde pinnatifida, segmentis crenulatis.*
The pinnatifid Trichomanes, with crenated segments.

The root is oblong, creeping, thick and fibrated. The plant consists of a single leaf, pinnatifid, and somewhat resembling the common polypody, but that the segments are deeply crenated. The pedicle is naked to about the height of three inches; the whole plant is about a foot high, and more than two inches broad in the middle; the extremities of the segments are hollowed into a kind of cup, in which stand clusters of the seed-vessels, covered with an operculum terminated by long hair. It is a native of Martinico, Plumier calls it, *Polypodium crispum calyciferum*.

3. *Trichomanes fronde decomposita capsulis rarioribus.*
The decomposed-leaved Trichomanes, with four capsules.

The root is of the thickness of a packthread, hairy, creeping, and furnished with a number of fibres. The plant grows to four or five inches high, and is very tender and delicate. The stalk is flat, the leaf decomposed, and divided toward the extremities into long, narrow, and obtuse segments. The capsules are large, and covered with an operculum furnished with long hair: they are few in number, and are not placed as in the others, at the extremities of all the segments, but principally toward the bases of the leaves. It is a native of many of the Caribbee Islands. Plumier calls it, *Filicula Vyscidifera*.



THE
HISTORY
OF
PLANTS.

PART III.

Plants usually called the more perfect ones.

Class the First.

MONANDRIA.

Plants which have only one stamen in each flower.

THE Monandria are of two kinds; some have only one style in the flower, others have two styles, though but a single stamen. The Monandria are hence arranged into two orders. The first comprehends those which have only one style, under the name of Monogynia: the second, those which have two styles, under the name of Digynia.

Class the First. Order the First.

MONANDRIA MONOGYNIA.

Plants which have only one stamen, and one style in the flower.

THE Monandria Monogynia differ considerably in the several genera in the fruit. Some of them have capsules formed of three separate cells, others produce only a single seed after every flower.

Hence they are to be arranged into two divisions.

Division

Division the First.

Monandria Mongynia, which have after every flower a capsule, divided into three cells.

C A N N A.

THE calyx of the Canna is a perianthium, composed of three small lanceolated leaves, which are coloured, which stand erect, and are permanent. The corolla is monopetalous, and divided into six parts. The lacinia or segments are of a lanceolated figure, and cohere at their bases: the three exterior ones are erect; the three inferior ones are longer than these, and two of them are erect, one reflex.

The stamen is a single filament, of a lanceolated figure, very much resembling the last segment of the corolla, and placed opposite to it, and hollow. The anthera is of a linear figure, and is affixed to the margin of the filament.

The germen of the pistil is roundish, rough, and placed below the receptacle of the flower. The style is single and ensiform, and of the length and figure of a segment of the corolla. The stigma is of a linear figure, and adheres to the margin of the style.

The fruit is a capsule of a roundish figure, scabrous, coronated, marked with three furrows, and composed of three valves, which form as many separate cells in it.

The seeds are of a globose figure, and not very numerous.

1. *Canna foliis ovatis, utrinque acuminatis, nervosis.*

The nervous and ovated-leaved Canna.

The root of this plant is of a vast size; it is oblong, and often of a foot, or more, in diameter; it is very succulent, and of a whitish colour, and creeps under the surface of the ground. The stalk is green, succulent, round, an inch, or more, in diameter, and six or eight feet in height. The leaves are large, and of a beautiful green colour. The nerves very high and strong in them; they stand alternately on the stalk at considerable distances: they are twelve inches long, and six or eight broad; the flowers are large, and of a beautiful scarlet colour. The capsule is large, and echinated on the outside; and is roundish, but has three angles. The seeds are large, and of a pale brown.

This elegant plant is not a native of any part of Europe, but Asia, Africa, and America all produce it, in considerable abundance, in several places. It is not unfrequent with us in the gardens of the curious, but it requires care. Caspar Bauhine calls it, *Arundo Indica latifolia*, p. 19. Tournefort, *Cannacorus ampliflimum folio flore rufo*, Inst. 367. Sir Hans Sloane and others call it, *Canna Indica*.

2. *Canna foliis lanceolatis, petiolatis, enerviis.*

The petiolated, lanceolated, and smooth-leaved Canna.

This is a very beautiful plant. Its root is large, of the thickness of a man's arm, fleshy, whitish, and of a sweetish mucilaginous taste, with a mixture of auster. The stalks rise to be four or five feet high; they are round, of the thickness of a man's thumb, soft and succulent, and of a pale green colour: the leaves are large, and of an oblong figure, seven or eight inches in length, three in diameter. They are broadest in the middle, small at the base, and terminate in a point. They are affixed to the stalk by short pedicles, and are of a pale bluish, or greyish-green, colour, and smooth surface, not marked with ridges by the prominent nerves, as in the other species. The flowers are very large and beautiful. This, so far as is yet known, is only of American origin. It is a perennial plant, like the former, but it seldom flowers with us. Lionæus, in the *Hortus Cliffortianus*, calls it *Cannoides*; and Dilleotius, in the *Hortus Elthamensis*, *Cannacorus glaucophyllus ampliore flore iris palustris facie*.

The other species of Canna are, 1. The broad-leaved, American Canna, with a deep red, shining flower. 2. The Canna, with a yellow spotted flower. 3. The narrow-leaved Canna, with a yellow flower, the *Albara* of Pifo.

The Indians use the juice of the Canna root, as an agglutinant and astringent.

AMOMUM.

AMOMUM.

THE calyx of the Amomum consists of several simple, partial spatheæ, disposed in an imbricated manner. The corolla is monopetalous, consisting of a short tube, and a limb divided into three oblong segments; the middle segment is larger than the rest, and the sinus opposite to it more open. The nectarium is monophyllous, and inserted into the large sinus just mentioned: it scarce at all appears above the segments of the corolla.

The stamen is a single filament, of an oblong figure, and like one of the segments of the corolla: the anthera is simple, and affixed to this.

The germen of the pistil is roundish, and stands below the receptacle of the flower. The style is single, slender, and of the length of the stamen. The stigma is obtuse; the fruit is coriaceous, of an oval figure, but somewhat three-cornered: it is composed of three valves, forming as many cells; the seeds are numerous and small.

The Amomum comprehends the plant called Zingiber by other authors.

1. *Amomum scapo nudo, spica ovata.*

The naked-stalked, oval-spike Amomum.

Zinger.

The root of this species is tuberous and nodose, of the thickness of a man's finger, somewhat flattish, and divided into several ramifications, of a pale reddish colour on the outside, and white within, and of an extremely acrid and fiery taste. It creeps under the surface of the earth, and does not grow to any great length singly. From this root arises a stalk of the thickness of a man's little finger; it is round and tender, somewhat larger toward the root than any-where else, and in that part it is of a reddish colour, elsewhere it is green. It rises to about ten inches high, and is terminated by a kind of clavated, or oval, spike. It is covered with green squammæ, resembling rudiments of leaves, pointed, and reddish, at the extremity. The spike is very beautiful: it is composed of scales of a fine gold-yellow, and a bright scarlet colour, or else of a fine shining green, variegated with white. From the sinus's of these squammæ, or scales, the flowers come forth; they much resemble, in their general figure, those of our orchis's, and are of a mixt reddish and whitish colour, and variegated with yellow spots. They are small, and but of very short duration, being succeeded by others, after they have been but five or six hours open.

These stalks, or scapi, on which the flowers are produced, have no perfect leaves on them; but, beside these, there arise also, from different parts of the same root, other stalks, if they may be properly so called; these are composed wholly of the bases of a multitude of leaves, surrounding one another: they grow to two feet, or more, in height. The leaves separate at their tops, and hang down loose also from their sides. They are about six or eight inches long, and an inch or more broad, soft to the touch, and pointed at the extremities, and are of a bright green colour.

This species is a native of the East Indies: it is frequent in many places there. It is cultivated also in several parts of America to advantage, but it does not seem a native there. We have it in some of our gardens in the stoves; it requires care to keep it alive, and never yet has been brought to flower with us. Plukenet calls it, *Zinziber angustiore folio, utriusque Indis alumna*, Alm. 317. C. Bauhine calls it, simply, *Zinziber*; and Ray, and others, follow his example; Rhede calls it, *Jukhi*.

2. *Amomum scapo nudo, spica oblonga obtusa.*

The naked-stalked Amomum, with an oblong, obtuse spike.

The root of this species is tuberous, of the thickness of a man's finger, and of two or three inches in length, covered with frequent protuberances, and divaricated in a very irregular manner. It is of a dusky orange colour on the surface, and white within, fibrous, and of an acrid taste, but much less so than that of the former species. The stalks, which produce the flowers, arise from several parts of the root: they are tender, succulent, and, throughout, of a pale greenish colour. Their surface is covered with little hollow squammæ, or scales, resembling rudiments of leaves, which terminate each in a hard, pale, brown point. At the top of this stalk stands a spike, of near two inches

inches in length, of the thickness of a man's thumb in the middle, and somewhat smaller at each extremity. This spike consists of small brownish leaves, variegated with purplish; and, from the sinus's of these, appear the flowers, which are small, and of a pale flesh colour, spotted with a deep red.

The leaves of this species grow, like those of the former, in clusters, from other parts of the root; they incircle one another with their bases, so as to form a kind of stalk. They are about two inches in length, and three in breadth, and are rough to the touch. The spike of flowers in this species has a very fragrant and aromatic smell, but the root is less aromatic, as well as less acrid, than that of the other species.

This is a native of Malabar, and of the Island of Ceylon, where it grows in vast abundance. We keep it alive in our stoves, but it never flowers with us.

The roots of the former species, or common Ginger, are taken up, after the flowers are decayed: the exterior bark is then taken off, and they are dried for exportation. The Indians eat the leaves, as well as the roots, fresh taken up, in many of their dishes, and they give the fresh root alone in cholics and flatulecies, we use it as a stomachic and carminative.

C O S T U S.

THE calyx of the Costus is a simple spadix; the spathe also are simple. The perianthium is very small, composed of a single leaf, tridentated at the edge, and stands on the germen. The corolla consists of three petals; they are of equal size, of a lanceolated figure, hollow, and placed erect. The nectarium is very large; it consists of a single leaf, and is of an oblong figure, tubulose, and divided at the extremity into two labia; the lower labium is broad, and longer than the corolla, it's extremity being divided into three segments; and the upper labium is short, of a lanceolated figure, and performs the office of a filament, supporting a single anthera, which is divided into two parts. The germen of the pistil is of a roundish figure, and stands below the receptacle of the flower. The style is capillary, of the same length with the filament. The stigma is capitated, compressed, and emarginated. The fruit is a roundish, coronated capsule, composed of three valves, and formed into three cells. The seeds are numerous and triangular.

Of this genus there is only one known species, and, therefore, there needs no distinction, or specific name, for it.

C O S T U S.

The root of the Costus is tuberous and creeping. It runs under the surface of the earth for several yards; it's general thickness is about an inch, but it swells out into large protuberances, at distances from one another; these are of the bigness of an egg, or more. It's colour is white, it's texture fibrous, but it is very succulent, and of a sweetish taste, with something of the flavour of ginger with it. From several parts of this root there rise distinct plants; each grows to be five or six feet high. The stalk is round, three quarters of an inch in diameter, of a blood-red colour, and extremely glossy surface, jointed in the manner of a reed, and full of a spongy pith within. The leaves stand alternately, and have no pedicles. They are of an oblong figure, and narrow, eight or ten inches in length, and not more than three in breadth, broadest in the middle, and terminated in a point; the middle rib is very prominent on the under surface; above there is a furrow at it, and several lateral ribs are distinguishable. The colour is a pale green, the surface smooth and glossy. There stands one leaf at every joint of the stalk, and they are soft to the touch, and succulent. The stalk is terminated by an imbricated head, composed of a number of obtuse, concave squammæ, of an oval figure, each squamma producing a single flower, and they all remain, after the flowers are fallen: these squammæ, when the plant flowers in the Indies, are red as coral; when it flowers in our stoves, they are green. The flowers are small, and of a pale red with us, much deeper in the Indies. The seeds are pressed closely against one another; they are, at first, bluish, afterwards brown, and, when broken, are found to be white within. They have a strong aromatic smell, like that of ginger, and yet have very little taste.

This plant is a native both of the East and West Indies; Malabar and the Island of Ceylon are the places where it is most abundant, but it is common enough in the Brasils,

Surinam, and other parts of America. It very rarely flowers with us. The root, when dried, is what is now universally received, under the name of *Costus*, in the shops: it is not, indeed, the *Costus* of the ancients, nor, unless the descriptions of the *Costus* of their time were more accurate, is it likely we should ever know what was so; this, when dried, is of a yellowish white, of an aromatic taste, and somewhat acrid and bitterish: in smell, it resembles the Florentine iris, having something of the violet scent in it. It is esteemed a pectoral cephalic and uterine; it is certainly an attenuant, and promotes urine and perspiration. It is an ingredient in many compositions, and is used in the theriaca, &c. instead of the *Costus* of the ancients, but it is little known in extemporaneous prescriptions.

ALPINIA.

THE calyx of the *Alpinia* is a small perianthium, and consists of a single leaf, divided into three parts: it is placed opoo the germen. The corolla is monopetalous, unequal, and, as it were, double; the exterior is trifid, the upper segment is hollow, the two side ones flat, and it has a tube: the interior is shorter, it's edge is trifid, and the lower segment of the three hangs out beyond the lateral parts of the exterior corolla; the other two are emarginated. The base is bellied, or ventricose. The stamen is a single filament, much resembling one of the segments of the interior corolla. The anthera is single, and of a linear figure; it adheres to the margin of the filament. The germen of the pistil is roundish, and stands below the receptacle of the flower. The style is simple; the stigma is obtuse, and somewhat trigonal. The fruit is a fleshy capsule, of an ovated figure, composed of three valves, and containing three cells: the seeds are numerous, of an ovated figure, with a prominent, but truncated, apex, and with a caudated base; the receptacle is very large and pulpy.

It is an American, described by Plumier.

MARANTA.

THE calyx of the *Maranta* is a small perianthium, affixed upon the germen, of a lanceolated figure, and consisting of three leaves. The corolla is monopetalous, and of the riegent kind. The tube is oblong, compressed, crooked, and oblique. The limb is divided into six parts: the alternate exterior segments are of an ovated figure, equal in size, and small; one stands below, two above: the two alternate lateral segments are very large, of a roundish figure, and represent a lower lip; the upper one is small, and bipartite. The stamen is a single, membranaceous filament, extremely resembling a segment of the corolla. The anthera is of a linear figure, and affixed to the side of the filament. The germen of the pistil is roundish, and is placed beneath the receptacle of the flower. The style is simple, and of the length of the corolla; and the stigma is somewhat trigonal and bent. The fruit is a roundish capsule, somewhat obscurely trigonal, and composed of three valves, in each of which there is a single, hard, rugose seed, of an ovated figure.

It is an American, described by Plumier; and is nearly allied to the *canna*, but cannot be joined with it.

CURCUMA.

THE calyx of the *Curcuma* consists of several partial, simple spathe, which fall off very soon. The tube of the corolla is narrow, it's limb is divided into three segments, which are of a lanceolated figure and patent. The nectarium is composed of a single leaf, of an ovated, but pointed, figure; it is larger than the segments of the petal, and inserted into the larger sinus, made by it's opening. The stamina are five in number, but, as only one of them is of service in the office of generation, or is properly organized for it, the plant still belongs to this class. Four of these filaments are erect, linear in figure, and barreo; the fifth is also linear, and resembles a petal: it is placed within the nectarium, and it's apex is bilid. The germen of the pistil is roundish; the style is of the length of the stamina; the stigma is simple and uncinated. The fruit is a roundish capsule, composed of three valves, and contains three cells, in each of which there are a great number of seeds.

Tournefort has erroneously made the *Curcuma* a species of *canna*; but this seems to have been owing to Bontius, who has figured the common *canna* under the name of *Curcuma*.

Curcuma. The root of *Curcuma* is sometimes long, sometimes roundish, and, from this difference of figure, has been supposed to belong to two species of plants; nay, the long-rooted and round-rooted *Curcuma* are figured as two plants, in the *Hortus Malabaricus*, under the names of *Manjella Kus*, and *Manja Kus*; but later observations confirm the suspicion of their being the roots of the same species, which is indeed, the only species of this genus.

CURCUMA.

Turmeric.

The root of the *Curcuma* is tuberous and creeping: it is of the thickness of a man's finger, frequently knotted and geniculated. It runs just under the surface, and has a great number of fibres, tolerably thick and strong, descending from the joints. On the outside it is of a pale colour, or of a mixt white and brown, and yellow: within it is of a fine yellow colour. It is rough on the surface, and compact within, considerably heavy, and of a fragrant smell, and a bitter, acrid taste, with somewhat fatty in it. From every joint of this root there arise three, four, or more leaves; they are very like those of the canna, about seven inches long, and four or five broad, largest in the middle, and terminate in a point: they are of a bright green colour, and firm texture. From other parts of the roots, and especially from the more healthy and robust ones, there arise separate flowering stalks: these are tender, succulent, round, and of the thickness of a goose-quill, and are of a pale green colour. Each grows to seven or eight inches high; its lower half is naked, but the upper part is formed into a thick spike: this is composed of a multitude of little leaves, green at the first, but afterwards of a fine yellow, or of an orange colour, or reddish. Each leaf is half an inch broad at the base, and gradually diminishes thence, till it terminate in a point, which is usually bent downwards. These leaves are placed in a squamous manner, over one another, and, in the base of each, there is lodged a tough, thick, viscid matter: from the hollows between these squamæ there are produced oblong flowers, somewhat resembling those of the canna in shape, but not more than a third part as large. They are sometimes yellowish, sometimes of a pale purple, but the colour is very uncertain. Herman says that the flowers consist of four petals each, but he errs extremely in this. The seed vessels, which succeed these, are small and membranaceous: the seeds are small also and round.

The *Curcuma* is very common in Malabar, in the Island of Ceylon, and in many other parts of the East Indies. Breynius calls it, *Curcuma foliis longioribus et acutioribus*; and, in the *Hortus Malabaricus*, it is called, *Manjella Kus*.

The root of the *Curcuma* is taken up for use, as soon as the flowering stalks are faded. It is cut into pieces of an inch or two, or more, in length, and dried in the sun. The Indians themselves are very fond of it, in soups, and other dishes. We use it much as an attenuant and deobstruent: in all obstructions of the viscera it is of great service; but it is particularly famous in jaundices: the dyers also use it in great quantities for a yellow colour.

KOEMPFERIA.

THE calyx of the *Koempferia* is a simple spatha, consisting of only one leaf, and opening on one side. The corolla consists of a single petal: the tube is long and thin; the limb is plain, and divided into six parts: three of the segments are lanceolated in figure, and equal in size; two other of the segments are of an ovated figure, and the single lower one is divided into five parts, which are each vertically cordated: all the segments are equal in length. The stamen is a single filament, of a membranaceous structure, and somewhat ovated figure, and is emarginated. The anther is of a linear figure; it grows to the filament all its length, and scarce emerges out of the tube of the corolla. The germen of the pistil is roundish. The style is of the length of the tube, and the stigma is obtuse. The fruit is a roundish, and somewhat trigonal capsule, composed of three valves, and containing three cells, in each of which there are a great number of seeds.

There is but one known species of this genus. It is described by Borman in his Ceylon, under the name of *Arobrebia*, and by Koempfer in his Japan. It very rarely produces its fruit, nature contriving to propagate it by germina placed near the root.

KOEMPFERIA.

K O E M P F E R I A.

Galangal.

The root of the *Kœmpferia* is tuberous and creeping: it runs under the surface in various directions, and is crooked and knotty. Its general thickness is that of a man's finger, but it is not unfrequently of an inch in diameter; it is surrounded with circular ridges in many places, and swells into frequent protuberances: its colour is a pale brownish red on the surface, and yet paler within; its smell aromatic; its taste extremely acrid and pungent; it emits fibres in great number, from several parts, and propagates itself a great way, in a little time, by spreading; from the several knots of the root arise the leaves; there grow two of them together, they stand on erect, broad, and flattish, hollow pedicles: they stand opposite to one another, and are of a roundish figure, and hollowed with a small sinus at the base; they are of a thick, fleshy structure, and bright green colour, except at the edge, where they are generally purplish. They are of a fine aromatic smell, and acrid taste. The flowers stand on long pedicles, which arise from the center, between the two leaves. They are white within, and toward the base of a deep purple, and in some parts yellowish and greenish. Every flower lasts, from the time of its opening, to the evening when it falls off, and in the morning after a fresh set appear.

This plant is frequent in Ceylon, Malabar, and many other parts of the East Indies. Its root is the Galangal of the shop. The apothecaries, and even the people in general who have written of the *Materia Medica*, distinguish two kinds of Galangal, the greater and the lesser; the latter is, of the two, much the stronger, and more acrid, and it has been supposed that they were the roots of two different plants, but they are, in reality, both the root of this species, and the larger are only the older and less vigorous ones. We have the plant in some of our gardens, but it requires a stove heat, and very seldom flowers with us; it never produces any fruit in our country, rarely, where native.

It is described in the *Hortus Malabaricus*, under the name of *Katsjula-Kelenger*. *Kœmpfer* calls it, *Wanhem*; and *Rudbeck*, *Orchis abortiva bifolia*. The root is a carminative and stomachic; it is a common ingredient in bitter infusions, and enters some of the shop compositions.

Class the First. Genus the First.

Division the Second.

Monandria Monogynia, which produce only a single seed after every flower.

B O E R H A A V I A.

THE calyx of the *Boerhaavia* is scarce distinguishable: it is a mere margin, very small, and standing as a corona on the head of the germen. The corolla consists of a single petal; it is campanulated, erect, and of a quinquangular figure. It is divided into five segments, which are short and emarginated. The stamen is a single short filament, on which is affixed a small, roundish anthera. The germen of the pistil is placed below the receptacle: the style is capillary and erect, and the stigma is obtuse. The fruit is a turbinate capsule, furrowed on the surface, and forming only one cell within, in which there is lodged a single seed.

This genus comprehends the *Boerhaavia*, and the *Antaniosphyllum* of *Vaillant*. *Linnaeus* has placed it in his *Genera Plantarum* among the triandria, and described it as having three stamina, but he had then only seen a dried specimen of it; he afterwards saw it in flower in the Upsal Garden, and, in his Catalogue of the Plants there, has placed it among the *Monandria*.

There is only one known species of this genus.

B O E R H A A V I A.

The root of the *Boerhaavia* is oblong, and of an inch, or more, in diameter, and consists of a hard, internal part or core, and a soft bark of the thickness of a shilling, or more. It is of a tolerable smooth surface, and dusky colour. The stalk is round, geniculated,



Canna

Costus
The Costus Plant



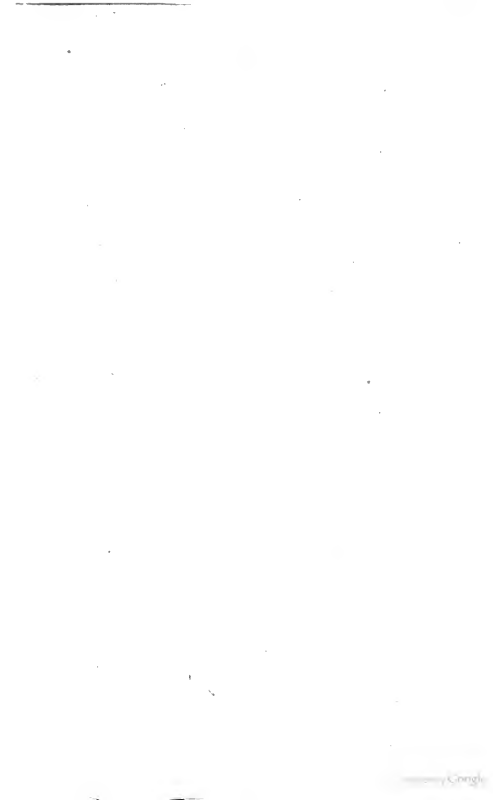
Curcuma

Hamphoria
The Galangal Plant



Salicornia
B. de la Sopa.





geniculated, diffuse, and spreading, and of a glossy surface, and red colour. The leaves are of an ovated figure; and thick, fleshy structure: they are of a bright green colour, and reddish at the edges. The flowers stand towards the top of the plant; in the axils of the leaves they are of a pale red on the outside, and of a deeper, or purplish, red within, especially near the mouth. The style is of a deep purple; the stamen is also purple, the anthera yellow.

The plant is a native of the East Indies, principally about Mountan. It loves a rocky or sandy soil: it succeeds very well in our stoves, and produces it's flowers and fruit there. Vaillant calls it, *Antaniphosphyllum folanifolium majus*. Rheede, *Talu Dauca*; Linnæus, *Boerhaavia diffusa*, and *Boerhaavia foliis ovatis*.

The Indians use the outer part, or bark of the root, as a purge, but it is not known as a medicine in Europe.

HIPPURIS.

THE calyx of the *Hippuris* is scarce distinguishable. It consists only of two extremely small margins, standing opposite to one another, on the head of the germen. There is no corolla: the stamen is a single filament, fixed on the receptacle of the flower. The anthera is very slightly bifid. The germen of the pistil is oblong, and placed under the receptacle: the style is single, subulated, and erect; it is placed within the stamen, and is longer than it. The stigma is acute; there is no pericarpium, but after every flower there comes a seed, which is roundish and naked.

This genus comprehends the *Limnopence* of Vaillant, and the *Pinastella* of Dillenius. There is only one known species of it.

HIPPURIS.

The root of the *Hippuris* is composed of a number of reddish, or blackish, articulated, oblong parts, which spread themselves every way on, or just under, the surface of the mud, and send down from every articulation a number of capillary fibres. The stalks arise from several parts of the root, sometimes singly, sometimes three or four together. They are round, jointed, like small reeds, and of the thickness of a large rush: they stand erect, and are largest at the base, whence they gradually grow smaller to the top, where they terminate in a point. The joints stand very close, and the whole stalk is smooth, not striated: the leaves are short, and stand in form of rays round the stalk, at the several joints. The whole plant grows to two feet high, and the leaves are narrow, and somewhat resemble those of the firs, from which, and from the regular growth of the plant, many have compared it to the pines and firs. The leaves are of a pleasant green colour, and round about the articulations there lie single naked seeds, of an oblong figure, and reddish brown colour; ten or twelve of these often grow round each articulation.

This plant is a native of England, but it is not common with us. I have observed it in Leicestershire, and in Yorkshire; it sometimes grows in the waters, sometimes on the mud, about their edges. Cordus calls it, *Limnopence*; Hist. 150. Ruppius, *Pinastella surrector*. C. Bauhine, *Equisetum palustre brevioribus foliis polyspermon*; and Rudbeck, *Polygonum polyspermum*. Many of the old writers have also called it, *Polygonum fecmina*.

Most of the botanical authors have confounded the *equiseta* with this, and this with the *equiseta*, but they are very distinct genera. The chare have also as erroneously been confounded with this genus, and with the *equiseta*, though widely different from both.

SALICORNIA.

THE calyx of the *Salicornia* is of a tetragonal figure, truncated, bellied out, and permanent. There is no corolla. The stamen is a single, simple, capillary filament: the anthera is roundish. The germen of the pistil is of an oblong, ovated figure: the style is simple, and placed under the stamen, and the stigma is hid.

There is no pericarpium, but the calyx becomes more ventricose, and contains a single seed.

1. *Salicornia internodiis brevioribus.**The short-jointed Salicornia.*

This species is large and robust; its root is small, oblong, and surrounded with a great number of fibres: its stalks are hard and woody toward the lower part, green and succulent toward the upper, and are throughout composed of a great number of very short joints, inserted into one another, in the manner of so many cups. The main stalk sends off a great number of branches, and towards its top, divides into a great many others; but these have no leaves, but only small branches like themselves, round and jointed, growing from them; they are round, succulent, and of a brackish saline taste. The flowers are very minute, and of a yellow colour; they stand only on the tops of the branches, and last but a little while.

This species is perennial, and is not a native of England. It is frequent about the coasts of the Mediterranean. The next species to be described greatly resembles it in its structure, and is often mistaken for it; and, by this mistake, this species has been called a native with us.

C. Bauhine calls it, *Kali geniculatum majus*. J. Bauhine, *Kali geniculatum* five *Salicornia*; and most of the other writers, simply, *Kali geniculatum*, by that means confounding it with the other.

2. *Salicornia internodiis longioribus.**The longer-jointed Salicornia.*

This species greatly resembles the former, but it is less robust, and is an annual plant. Its root is considerably large for the size of the plant, of an oblong figure, and whitish colour, and furnished with a considerable number of thick and strong fibres. The plant usually rises to eight or ten inches in height, sometimes to more. The stalk is succulent, and composed of cylindric joints, inserted into one another; these joints are longer than those of the former, though that be so much the larger plant: from the sides of the branches there issue others, and from those yet others, till the whole have a very ramose figure; the whole plant is of a fine bright green colour, and is soft and tender down to the very bottom: the stalks all the way are thicker at the joints than elsewhere, and the whole plant has a brackish, but not disagreeable, taste: the flowers grow only on the tops of the branches; they are small, and of a pale green colour; the seeds are black and oblong. This species is extremely common with us on the sea-coasts, and almost through the world. Our people have a way of gathering it, and pickling it, under the name of *Sampire*. C. Bauhine calls it, *Kali geniculatum alterum vel minus*; and J. Bauhine, *Kali Arabum* allied.

Class the First. Genus the Second.

MONANDRIA DIGYNIA.

Plants which have only one stamen, but have two styli in each flower.

Of these there are but three known genera.

CORISPERMUM.

THE *Corispermum* has no calyx. The corolla consists of two petals, which are compressed, crooked, pointed, equal in size, and placed opposite to one another. The stamen is a single, long, crooked filament; the anthera is simple. The germen of the pistil is roundish, and compressed. The styles are two in number; they are capillary and crooked. The stigmata are acute. The fruit is a roundish capsule, compressed, bilocular, and has a furrowed edge: the seeds are of an oblong figure, and stand single.

This genus comprehends the *Stellaria* of Dillenius, the *Corispermum* of Jussieu, and the *Rhagrostis* of Buxbaum. It is liable, however, to great variation in some of the parts: the essential and certain distinction is in the corolla. The fruit sometimes varies in being bilocular and tetraspermous, and it is sometimes gymnospermous; and the

sex

sex varies yet more, it being sometimes hermaphrodite, sometimes monœcious, sometimes dioecious, sometimes polygamis. As the corolla, however, is invariable, the genus may always be distinguished.

Corispermum foliis oppositis.

The Corispermum, with leaves placed opposite.

The root of this species is small, and creeping, and is usually affixed in the mud at the bottom of waters not very deep; from this grows several stalks very thin, tender, and flexible, which rise up till they reach the surface of the water, where great tufts of them usually appear together, and the upper leaves of each dispose themselves in a sort of radiated manner, so as to resemble a star; and hence it obtained the name of *Stellaria Aquatica*, and *Water Starwort*, among the ordinary botanical writers. The leaves stand in pairs on the stalks, opposite to one another, and every pair at the distance of about three quarters of an inch from the other, from the same joints, whence the leaves issue; there usually grow also a few white fibrous roots. The stalks grow, according to the different depth of the water, to a foot or two in length, or to no more than five or six inches; they are usually simple, sometimes branched. The leaves are of a bright green colour, about half an inch in length, and a sixth of an inch in breadth. They are broadest in the middle, and thence gradually grow smaller toward each extremity. The clusters of leaves on the surface of the water consist of several leaves, broader than the others, and laid in a radiated manner over one another, the inner ones growing gradually shorter and shorter to the center. The flowers stand in the axils of the leaves, two at a joint. They are small, white, and the petals are so bent, that they almost meet one another. The whole plant is of a very tender and delicate structure.

It grows abundantly in almost all our ponds and ditches, covering spots of them often of two or three yards diameter. Parkinson, Gerrard, and the rest, call it, *Stellaria aquatica*; and J. Bauhine, *Alfene aquis innatans foliis longiusculis*. It varies in its manner of growth so extremely, as to have been mistaken by authors for several species, and described by them as such. The plant, in its most natural state, produces leaves of an elliptic, oblong figure. One of the varieties, esteemed a different species by authors, is that with leaves bifid at the ends. The authors, who erected a new species out of this variety, did not give themselves the pains to examine the plant in its common state, in which its lower leaves are always bifid in this manner at the extremity; and the whole difference between the new species and that was, that in the one only the lower leaves were thus emarginated, in the others all. This variety is usually found in autumn, in ponds, where it has grown under water in the spring, and the water, in the heat of summer, has been dried up, and the plant destroyed down to the root: in this case it grows again on the ponds filling with fresh water; and its first shoots in this state always have narrow linear leaves, bifid at the end, like the lower leaves of the other plants. Another variety is the shorter and rounder-leaved plant; in this state it is small, and creeps on the surface of the mud, in places where the water has been dried up, or in places where the feeds have been received, though never covered with water in these places; in this case the stalk takes root at every joint, and its leaves are smaller, shorter, and roundish.

The first of these varieties is described in the Fl. Pr. under the name of *Lenticula palustris angustifolia folio in apice dissecto*; and by Petiver, in Ray's Synopsis, under that of *Stellaria aquatica longifolia*; and by Ray, under that of *Stellaria aquatica foliis longis tenuissimis*. The other is called by Dillenius, Cat. Giff. *Stellaria minor et repens*; by C. Bauhine, *Lenticula palustris bifolia fructu tetragono*; and by Pliny, *Calitriche*.

There are evident varieties of the common *Corispermum*, first described; but there are, however, two really distinct species, which will be easily distinguished by their names. The first is the *Corispermum foliis alternis*, called by Jossieu, *Corispermum hyssopifolium*; and by Buxbaum, *Rhagothis femine pastinache*. This grows on the sandy shores in Tartary, about the Volga. The second is the *Corispermum glabrum majus longissimis foliis* of Amman; the *Rhagothis foliis arundinaceis* of Buxbaum, found also on the shores of the Volga, and in many other places in Tartary. Linnaeus calls the first of these two, *Corispermum floribus lateralibus*; the latter, *Corispermum spicis squarrosis*. They are both annual, but the latter is larger and more procumbent; its stalk smooth, whereas it is rough in the other: the leaves not only larger,

but more robust; and the top of the branches more imbricated with leaves, and as it were spiked.

Linnaeus has thought of dividing this genus into two, from the difference of the fruit, calling the *Stellaria* of Dillenius, which has four seeds in every fruit, *Callitriche*; and the *Corispermum* of Jussieu and Rhagrostis of Buxbaum, which have only single seeds, *Corispermum*: but the varieties in the flower, as well as this in the fruit, are so great, that it is of little consequence, though just and exact. In the *Corispermum foliis alternis*, the lowest flower usually has four stamens, the second three, the third two, and the rest only one each. So that the same plant has the characters not only of several genera, but even of several classes.

BLITUM.

THE calyx of the *Blitum* is a perianthium, consisting of one leaf divided into three parts, and is permanent and patent; the segments are of an oval figure, equal in size, and two of them gape open more than the rest. There is no corolla; the stamen is a single setaceous filament, longer than the cup, and placed erect within the intermediate segment. The anthera is didymous. The germen of the pistil is oval, and pointed: the styles are two in number; they are erect, of the length of the stamen, and they gape open: the stigmata are simple; the fruit is a baccated calyx; it is of an oval figure, and somewhat compressed. The seed is single, of a globular figure, compressed, and of the size of the capsule.

This genus comprehends the *Chenopodio-Morus* of Boerhaave, and the *Morocarpus* of Ruppert.

1. *Blitum capitellis spicatis terminalibus.*

The Blite, with spicated, terminatory beads.

The root of this species is considerably large, of an oblong figure, and white colour, soft and fleshy, and of an agreeable taste. From this there usually arise several stalks together: they are round, striated, of a deep colour, and considerably thick; they grow to ten or twelve inches high, and are very much branched. They usually are in part procumbent, but the half, or more, of the stalk generally rises erect. The leaves stand on long pedicles; they are of a triangular figure, like those of spinach, and stand irregularly on the stalks: the lower ones are somewhat dentated round the edges, the upper ones are even. The flowers and fruits grow on the tops of the branches. The flowers are singly small, and inconsiderable, but with the fruit in the cluster they appear very singular; the whole resembles very much a mulberry or raspberry, and adheres very firmly to the stalk; it is of the bigness of a nut, of a fine red colour, and full of juice, much resembling red wine in colour. The whole cluster of the fructifications makes a kind of double globules, firmly fixed to the stalk without any pedicles.

This species is not a native of England, but it is not uncommon in our gardens. It is an annual but a sufficiently hardy plant, easily raised from seed, and standing in the open ground. It is a native of Tyrol, and the country thereabouts. Boerhaave calls it, *Chenopodium-morus major*. Haller, *Chenopodium-morus foliis pene integris*. Ruppert, *Morocarpus major*; and Ray, *Atriplex baccifera*.

2. *Blitum capitellis sparsis lateralibus.*

The Blite, with sparsed lateral beads.

The root of this species is oblong, as thick as a man's finger, and of a white colour, and sweet taste; from this there rise usually five or six stalks, sometimes only a single one. The stalk is somewhat striated, and very ramose, dividing usually almost immediately from the base into three or four parts. These grow to a foot, or more, in length, and each sends out a great number of branches, so that the whole plant is very ramose; the stalks are in part procumbent, in part erect. The leaves stand irregularly on the stalks; they are triangular, hoary, and serrated round the edges. The fructifications grow in clusters, resembling small mulberries, not on the extremities of the

the stalks, but on it's sides; and in the size of the leaves they are juicy, and of a fine red colour, and give a great beauty to the plant. This species is a native of Spain, Italy, and Tartary; it's fruit is ripe in August. It is kept in some of our gardens, but not so frequently as the former species. Clusius calls it, *Atriplex sylvestris baccifera*. C. Bauhine, *Atriplex sylvestris mori fructu*; and Amman, *Blitum fragiferum*, maximum, polyspermum.

Class the Second.

DIANDRIA.

Plants which have in every flower two stamina.

THE Diandria are of three distinct kinds; some have only one style in the flower, others have two, and, finally, others have three styles.

The Diandria are hence arranged into three orders: the first comprehending those which have only one style, under the name of Monogynia; the second, those which have two styles, under the name of Digynia; and the third, those which have three styles, under that of Trigynia.

Class the First. Order the First.

DIANDRIA MONOGYNIA.

Plants which have only one style, and two stamina in each flower.

THE Diandria Monogynia differ very considerably in the several genera, in regard to the corolla and the fruit. Some of them have regular, others irregular corolla; and, of the latter, some have the seeds contained in capsules, others have them naked.

Division the First.

Diandria Monogynia, which have regular corollae.

NYCTANTHES.

THE calyx of the Nyctantes is a monophyllous perianthium, very small, of a cylindric figure, lightly divided into eight segments, or denticulate, of a subulated figure, and permanent. The corolla consists of a single petal, and is of the hypocrateriform kind. The tube is cylindric, and longer than the cup: the limb is plane, divided into eight segments of an oblong figure, and patent. The stamina are two extremely small filaments affixed to the receptacle, and of a subulated figure: the anthers are erect, and somewhat acute: the germen of the pistil is roundish and depressed. The style is simple, of the length of the tube: the stigmata are two, and are erect. The fruit is a didymous berry, of a roundish figure, and contains two cells. The seeds are roundish and large, and one only is contained in each cell.

1. *Nyctantes foliis inferioribus cordatis obtusis, superioribus ovatis acutis.*

The Nyctantes, with the lower leaves cordated and obtuse, and the upper ones ovated and acute.

Arabian
Jasminc.

This elegant little shrub does not rise to more than two or three feet high, and often trails upon the ground, or winds about other things. It's bark on the trunk is grey, and full of cracks; the branches issue two together, opposite one to the other; they are round, somewhat hairy and tender, sometimes wind round other things, sometimes not. The first leaves which appear in the spring are cordated, obtuse, and almost emarginated; those which appear afterwards in the summer are ovated, and acute; they all stand on pedicles, and are nervous, smooth at the edges, and not hairy on either side, except that underneath, just at the ramifications of the vessels, there are sometimes a few hairs: their petioles are crooked, and seem to be jointed in the mid-

dle, the leaves fall off by the perioles breaking at this joint, and, in consequence of this, there remains a part of it on the branches, which thence appear as it were spinose; at the extremities of the branches stand the flowers in clusters; three, five, or nine flowers usually stand together; they are large and white, each has it's separate pedicle. They smell extremely sweet, somewhat like the lilly of the valley-flower, but with a flavour of the citron among it: they smell much sweeter in the night than at any other time.

This species is a native of Malabar, and some other parts of the East Indies. We have it in some of our gardens. It requires a stove heat, and flowers with us, but very seldom ripens it's fruit here. It has been generally called, *Jasminum Arabicum*; and the first oil or essence of jasmine, or jessamy, we were acquainted with, was distilled from the flowers of this shrub, not from jasmine. Ray calls it, *Sauchae Arabicum*, five *jasminum Arabicum*. Clusius gives it the same name, with the addition of *Sive siringa Arabica*. In the Hortus Cliffort. it is called, *Nyctanthes caule volubili foliis subovatis acutis*; and, in our Gardener's Catalogue, *Jasminum Arabicum foliis Limonii conjugatis*.

2. *Nyctanthes foliis omnibus lanceolatis.*
The Nyctanthes, with all the leaves lanceolated.

**Indian
Jasmine.**

This species is larger and more robust than the former; it grows to six feet high, and is very much branched: the young branches are covered with a fine down, the older are hard, geniculated, and covered with a brown cracked bark. The leaves grow in pairs, and are oblong and lanceolated, broadest in the middle, and terminating in a very long, narrow point. They are of a shining, glossy, green colour, and are smooth both on the upper and under surfaces. They have no smell, but are of a very bitter taste. The flowers are large and white, of a fine fragrant scent, and they usually stand three or five in a cluster. The fruit is a small black berry, consisting of a pulpy matter, covered with a very thin skin, and containing one seed.

This is a native of Malabar, Java, and Ceylon, and has not, that I know of, been yet raised in any of our gardens. Ray calls it, *Jasminum Indicum flore polypetalis, exalbido, fructu minori*. Rheede, *Tsjiregam mulla*.

The other species of the *Nyctanthes* are, 1. The larger-fruited *Nyctanthes*, or *Kater Tsjiregam mulla* of the Hortus Malabaricus. 2. The red-edged *Nyctanthes*, or *Kater pitsjegam mulla* of the H. M. and 3. The larger-leaved, weak-stalked *Nyctanthes*. All these are natives of the East Indies. We sometimes meet with specimens of them prepared upon the spot; and some of them have been kept in the stoves of the late Lord Petre, and other curious persons.

J A S M I N U M.

THE calyx of the *Jasminum* is a tubulated, oblong perianthium, consisting of a single leaf, divided into five short segments at the edge, and standing erect. The corolla consists of a single petal. The tube is cylindric and long; the limb plane and divided into five segments. The stamina are two short filaments; the antheræ are small, and are hid within the tube of the corolla. The germen of the pistil is roundish; the style is capillary, and of the length of the stamina, and the stigma is bifid. The fruit is a smooth oval berry, containing two cells: the seeds are two in number; they are large, of an oval, oblong figure, convex on one side, and flat on the other, and they are covered with a membrane.

The figure of the flower varies; it is sometimes acute, sometimes obtuse, but the number and proportion of the stamina is regular and constant; the fruit is a single berry in some, and a double one in others.

1. *Jasminum foliis oppositis pinnatis.*
The Jasmine, with opposite, pinnated leaves.

**Common
Jasmine.**

This is the common *Jasmine*. It is a weak shrub; it's branches rise to six, seven, or eight feet high, if supported; they are thin and tough, and the young ones are green, the older brownish. The leaves are pinnated; there usually are three pinnæ on each side the middle rib, and an odd leaf at the end. The pinnæ are all short, and pointed

pointed at the ends: they are smooth, and of a deep green colour. The flowers grow, as it were, in an umbel, and are of a very sweet smell. It rarely produces it's fruit with us; where it does, the berry is greenish, and the seeds round. This shrub, though now so common with us, and hardy enough to bear so well the severity of our climate, is originally of East Indian origin. The oil of Jasmīne, or, as it is vulgarly called, essence of Jessamy, is now usually prepared from the flowers of this species. C. Bauhine calls it, *Jasminum vulgatum flore albo*; others, *Jasminum vulgare*.

2. *Jasminum foliis alternis, ternatis, pinnatisque, ramis teretibus.*

The round-branched Jasmīne, with alternate, ternate, and pinnated leaves.

This species grows to four feet, or more, in height, when properly supported. It's branches are reddish, and the young shoots are rounded, except for two striæ, on the sides, from the petioles or pedicles of the leaves. The leaves usually stand three together, sometimes seven, in a pinnated manner. They are large, and of an oblong figure, somewhat resembling those of the pomegranate, ovated, scarce at all pointed, of a fine shining green colour, and not at all denuded at the edges. The flowers stand in a sort of umbels, like those of the common Jasmīne; they are large, of a fine shining yellow colour, and extremely sweet smell; these are succeeded by oblong berries, green, at the first, but yellow and pellucid, when ripe.

This species is a native of the East Indies, and of some other places: it is not uncommon in our green houses. Ferrarius calls it, *Jasminum Indicum, flavum, odoratissimum*, a name most other authors have borrowed for it. Linnæus, in the H. C. calls it, *Jasminum foliis alternis, ternatis, obtusis*;

3. *Jasminum foliis alternis, ternatis, pinnatisque, ramis angulatis.*

The angular-branched Jasmīne, with alternate, ternate, and pinnated leaves.

This rises to be a shrub of the same kind of stature with the common Jasmīne. It's branches are tender, green, and flexible, and a little angulated. The leaves are in general ternate, but in the middle of the branches pinnated, and composed of seven pinne: the lateral leaves are oval, and pointed, and are twice as small as the terminating leaf, which is large, of an oval figure, pointed at the extremity, and narrow at the base. They are all of a firm structure, smooth and glossy. The flowers are yellow, and smell very sweet: they stand in a kind of umbels, as those of the other species do, and the segments are obtuse. The fruit is a moderately large, oblong, black berry. This species is found wild in many parts of the East Indies. It is not uncommon in our green houses: it is an ever green, and flowers very plentifully with us.

C. Bauhine calls it, *Jasminum humile luteum*. J. Bauhine, *Gelsomimum sive Jasminum luteum*. Linnæus, in the Hort. Cliffort. *Jasminum foliis alternis, ternatis, acuminatis*.

4. *Jasminum foliis alternis, ternatis, simplicibusque, ramis angulatis.*

The alternate, ternate, and simple-leaved Jasmīne, with angulated branches.

The root of this species is remarkable for it's creeping: it runs under the surface to a great distance; from this there arise a number of shoots or separate plants; these grow to be five or six feet high: the stalks are angular and green, and send out many branches. On these grow the leaves, sometimes single, but usually three on a pedicle. They are small, and in some measure resemble those of rue. The flowers stand on the tops of the branches; they are yellow, and like those of the common Jasmīne. They are succeeded by large round berries, red, when ripe. This species is a native of Franco, Spain, and Italy: it is common in the hedges about Montpellier. It is not wild with us, but is common in our gardens. C. Bauhine calls it, *Jasminum luteum vulgo dictum bacciferum*. J. Bauhine, *Trifolium fruticosum quibudam polemonium flore luteo*.

luteo. Others call it, Polemonium simply, or Polemonium flavum and luteum; Dodonæus, Jasminum fruticans.

The other species of Jasmine are, 1. The large, flowered, Spanish Jasmine. 2. The white Jasmine of the Azores Islands. 3. The broad-leaved, Indian Jasmine. 4. The bay-leaved American Jasmine, with extremely sweet flowers. 5. The tobacco-leaved, arborefcnt Jasmine, with white flowers. 6. The nightshade-leaved American Jasmine, with bluish-black berries; and, 7. The creeping, violet-leaved Jasmine.

LIGUSTRUM.

THE calyx of the Ligustrum is a perianthium, consisting of one leaf, of a tubulated form, very small, and divided into four short segments at the top, erect and obtuse. The flower consists of a single petal, and is of the infundibuliform kind. The tube is of a cylindric figure, and is larger than the cup. The limb is patent, and is divided into four oval segments. The stamina are two simple filaments, placed opposite to each other. The antheræ are erect, and usually of the length of the corolla. The germen of the pistil is roundish; the style is very short; the stigma is bifid, obtuse, and very thick. The fruit is a smooth, globose berry, containing only one cell, in which there are four seeds, convex on one side, and angulated on the other.

1. *Ligustrum folio angustiore.*

Narrow-leaved Privet.

Privet.

The root of the common Privet is large and strong: it's trunk often an inch and an half in diameter, and it's height eight or nine feet. It is very ramose; it's branches fine and slender, and very tough: the older branches are covered with a greyish bark, the younger ones are green. The leaves stand two together, opposite to one another; they are oblong and narrow, of a deep green colour, and fleshy structure, smooth and glossy, and of an acrid, bitterish taste, with some astringency. The flowers grow in clusters, at the tops of the branches; they are white, small, and very fragrant: the berries, which succeed these, are small, and of a jet black.

This is the only European species of Ligustrum. It is common wild with us, and in almost all other parts of Europe. It flowers almost all the summer. C. Bauhine calls it, Ligustrum Germanicum; other authors, simply, Ligustrum, or Ligustrum vulgare. Our gardeners have a way of variegating it's leaves with yellow and with white. Tournefort has named this variegated plant as a species.

2. *Ligustrum folio latiore.*

Broad-leaved Privet.

This is a low, but very elegant, shrub. It usually rises with a single stem, which is branched out into many others. The bark is of a dusky brown colour, very smooth, and scarce ever cracked at all. The branches are tough; the leaves are an inch broad, and more than an inch and an half long, broadest in the middle, and narrowest at each end: they are of a fine shining green, and somewhat resemble the leaves of the common bay-tree. The flowers are larger than those of our Privet, and of a bright yellow colour: the berries are large and white.

This is a native of America. Plumier has described it under the name of Ligustrum laurifolium, flore flavescens; baccis niveis.

These are the only known species of Privet; and the latter of them is scarce ever seen with us.

PHYLLYREA.

THE calyx of the Phyllyrea is a small perianthium, with four indentings at the edge, and is permanent. The corolla consists of a single petal: it has scarce any tube. It's limb is divided into four short segments, of an oval figure, revolute and acute. The stamina are two very short filaments, placed opposite to each other. The antheræ are simple and erect. The germen of the pistil is roundish; the style is simple, and

and of the length of the stamina. The stigma is thick. The fruit is a globose berry, having but one cell, in which there is a single, large, globose seed.

1. *Phyllyrea foliis lanceolatis subintegerrimis.*
The lanceolated-leaved *Phyllyrea*.

Common
Phyllyrea.

This species of *Phyllyrea* grows to six or seven feet high. Its wood is white and firm, its bark greyish: it is very ramose. Its leaves stand together in pairs, one opposite to the other: they are oblong, narrow, and even at the edges, and of a bitterish, astringent taste. The flowers grow in clusters, at the bases of the leaves; they are small, and of a greenish-white colour: the berries, which succeed these, are round, and, when ripe, of a bluish-black; these stand on very short peduncles, and close to one another: they are of a mixed sweet and bitter taste, and in each is a single, hard kernel.

This shrub is very common in our gardens, where it bears the open air, and needs no care or trouble to be taken about it; but it is not a native of England. It is wild in great abundance in Italy, Germany, Spain, and some parts of France.

This species varies extremely in its general size, and in the largeness of its leaves; hence Clusius has made two species, if not three; his third and fourth *Phyllyrea* are evidently the same, and his fifth seems so too.

2. *Phyllyrea foliis cordato-ovatis.*
The *Phyllyrea* with cordated oval-leaves.

Prickly
Phyllyrea.

This is a more robust shrub than the former, though it scarce rises to so much height as it. Its stem is an inch, or more, in diameter, the wood white, and the bark of a greyish colour. On the young branches the bark is green, spotted with white. The leaves are of a dusky green colour; they are an inch and an half long, near an inch broad in the widest part, of a thick consistence, and somewhat prickly round the edges. The flowers are small, and whitish, and stand in clusters about the axæ of the leaves. The berries are small, round, and black.

This species is a native of Portugal, and of some parts of Italy; and, though its leaves are so extremely different in figure from those of the other, yet, in all other respects, it is very like it. C. Bauhine calls the former species, *Phyllyrea ligustri folio*, and this, *Phyllyrea latifolia spinosa*; J. Bauhine calls the last, *Phyllyrea foliis ilicis*; both these authors, however, as well as Clusius, and many others, have been misled, by the variety both species sometimes appear in, to describe each of them under the name of several different ones. C. Bauhine calls one variety of the first, *Phyllyrea angustifolia prima*; and another, *Phyllyrea angustifolia secunda*; and a variety of the latter, *Phyllyrea folio leviter serrato*. Most of the botanical writers, since his time, have copied these errors from him.

The really distinct species of *Phyllyrea*, beside these two, are, 1. The small, broad-leaved *Phyllyrea*. 2. The box-leaved *Phyllyrea*. 3. The narrow-leaved, prickly *Phyllyrea*. 4. The narrow-leaved, deeply-indented *Phyllyrea*. 5. The nerium-leaved *Phyllyrea*. 6. The American *Phyllyrea*, with a yellow root, and pointed leaves. 7. The American *Phyllyrea*, with a red root, and roundish leaves.

The leaves and bark of *Phyllyrea* are said to be astringent, and good in ulcers of the mouth, but they are not in use at this time.

O L E A.

THE calyx of the *Olea* is a small, tubulated perianthium, consisting of one leaf. It has four indentings at the rim, and is erect and deciduous. The corolla consists of a single petal. Its tube is cylindric, and of the length of the cup; the limb is plain, divided into four parts, of a semioval figure. The stamina are two short filaments, of a subulated figure, placed opposite to one another: the anthers are erect. The germen of the pistil is roundish. The style is single, and very short; the stigma bifid and thick, and its segments are emarginated. The fruit is a drupe, of an oval figure, smooth, and containing only one cell, in which there is lodged a single, rugose nut, of an ovato-oblong figure.

1. *Olea foliis oblongis, angustis, rigidis.**The Olea, with oblong, narrow, rigid leaves.***The Olive.**

This is the common Olive-tree. It grows to be a large and tall tree, and spreads out its branches every way. The bark is smooth, and of a greyish colour, the wood tolerably firm and solid. The leaves are of an oblong, narrow figure, and greyish colour; they, in some degree, resemble those of the common, long-leaved willows; they are even at the edges, of a thick structure, and have no visible veins, except only the middle rib. They are of a darker colour above, and a paler on the under surface; they stand on extremely short pedicles, and frequently in pairs, opposite to one another. The flowers grow in clusters, at the base of the leaves; they stand on short pedicles: they are small, and of a greenish white. These, in many places, fall without producing any fruit, but, where the tree thrives well, they are succeeded by the common Olives.

The Olive-tree is not a native of England, but it is frequent in many parts of Europe, in moderate climates. It varies extremely in the size, shape, and colour of its fruit, in consequence of the culture; and Tournefort has recounted these varieties as so many distinct species. C. Baohine, and most of the other writers, call this species *Olea sativa*. The Oleaster, or *Olea Sylvestris*, described by many as a different species, is the same in a wild or uncultivated state.

The really distinct species of the Olive are, 1. The African *Olea*, with box-like leaves, and a white, scabrous bark. 2. The African *Olea*, with a long and broad leaf, of a deep shining green above, and a paler green underneath. 3. The African *Olea*, with a long, narrow, pale-green leaf, and round, purple fruit. 4. The wild, Spanish Olive, with rigid leaves, hoary underneath, and an obtusely-mucronated fruit.

We owe to the common *Olea*, first described, the pickled Olives eaten at our tables; and the oil we eat with salads, and use on so many, and so important, occasions, both in medicine and mechanics.

CHIONANTHUS.

THE calyx of the *Chionanthus* is a perianthium, consisting of one leaf, divided into four segments at the edge, erect, acuminate, and permanent. The corolla consists of a single petal, and is divided into four parts. The tube is very short, no longer than the cup, and is patulous. The limb is divided into four extremely long segments, which are erect, acute, of a linear figure, and somewhat uneveto. The stamina are two extremely short filaments, of a subulated figure, and are inserted into the tube. The antheræ are cordate and erect. The germen of the pistil is of an oval figure. The style is simple, and of the length of the cup. The stigma is obtuse and trisid. The fruit is a round, unilocular berry, containing a single, striated osicle. The stamina in this genus are often three, instead of two. The genus itself is allied to the *nyctanthes*, the *syringa*, the *olea*, *ligustrum*, *phillyrea*, and *jasmine*, but, most of all, to the *fraxinus corollifera*. There is but one known species of it.

CHIONANTHUS.

The root is very ramose, and brachiated. The trunk is covered with a brown bark, cracked, and furrowed. The leaves are broad and roundish; the upper side of a deep green, the under side hoary and white. The flowers are white, and deeply lacinated. It is a native of Ceylon; but we have it in some of our gardens. Plukenet has figured it in his *Almagestum*, T. 241. f. 4.

SYRINGA.

THE calyx of the *Syringa* is a small, tubulated perianthium, consisting of a single leaf, divided into four short segments at the mouth, and erect. The corolla consists of a single petal; the tube is cylindric, and very long: the limb is divided into four segments, of a linear figure, hollow, and obtusely-pointed. The stamina are two very short filaments: the antheræ are small, and hid within the tube of the flower. The germen of the pistil is oblong; the style is capillary, and of the length of the stamina: the stigma is bifid and thick. The fruit is an oblong, compressed, acuminate capsule, formed of two valves, and containing two cells. The seeds are single, oblong, and compressed, pointed at each end, and furnished with a membranaceous margin.

This genus comprehends the lilac of Tournefort.

1. *Syringa*

1. *Syringa foliis ovato-cordatis.*
The Syringa with ovato-cordated leaves.

Common Lilac.

This is a large shrub. It rises to eight or ten feet high, and sends out a great number of branches. Its trunk is of two or three inches in diameter, and is covered with a bark, of a pale brown. The leaves grow two at a joint, and are large, oblong, and of an ovated figure, somewhat cordated at the base. They stand on moderately long pedicles, and are even at the edges, and of a pale colour, both on the upper and under sides. The flowers are small, but they grow in great clusters, and are of a very sweet smell: they are naturally bluish, but frequently of a pale rose red, or quite white.

This species is common in our gardens: it is a native of Egypt and the East Indies, yet it perfectly well bears the cold of our climate. C. Bauhine calls it, *Syringa cærulea*; Tournefort, *Lilac*; Renealm, *Calobotrichys*. Tournefort very improperly makes the white-flowered one a distinct species, under the name of *Lilac flore albo*.

2. *Syringa foliis lanceolatis integris laciniatisque.* Persian
The Syringa with undivided, lanceolated, and lacinated leaves. Lilac.

This is a small, but beautiful shrub. It grows to four or five feet high: its wood is white, and the large branches have also a white pith in them. The bark is of a dark brown, or else reddish, and is usually spotted with innumerable punctures, of a dusky yellow. The leaves, which grow on the lower part of the branches, are lacinated in such a manner as to resemble, in some degree, the leaves of the common jasmine; those higher up are single, undivided, and of a lanceolated figure, and much resemble those of the common privet. The flower is small, and usually of a pale rose colour, or flesh colour, and of an extremely sweet smell. It sometimes flowers twice in a year, but the latter flowers, with us, are less beautiful and less fragrant than the former.

This species is a native of Persia, but it is frequent in our gardens. It is very singular that, though the flower of this shrub is so perfectly similar to that of the common Lilac, yet authors have referred it to very different genera. C. Bauhine calls it, *Ligustrum foliis laciniatis*; Parkinson, *Jasminum Persicum*. Cornutus calls it, *Agem lilag Persarum*; and Gerard and J. Bauhine, *Syringa cærulea*.

3. *Syringa foliis lanceolatis integris.*
The Syringa, with undivided leaves.

This rises to a shrub of six or seven feet high. Its bark is of a dusky brown colour, and very smooth: its leaves are oblong and narrow, broadest at the middle, narrow at the base, and pointed at the extremity; they are of a dusky green colour on the upper side, and somewhat paler underneath. The flowers stand in clusters, and greatly resemble those of the common Lilac; they are usually of a pale red, sometimes bluish. It greatly resembles the former species, in all respects, but in wanting those lacinated leaves which it has; possibly they may be but varieties one of another, though there requires further observation to determine that with certainty.

These are all the known species of *Syringa*. The shrub, commonly called *Syringa* by our gardeners, is not of this class; it will be described hereafter in its place, under the name of *Philadelphus*.

C I R C Æ A.

THE calyx of the *Circæa* is a perianthium, composed of two leaves, of an ovated figure, concave, bent backward and deciduous. The corolla consists of two petals; they are turbinate and cordated, equal in size, patent, and shorter than the leaves of the cup. The stamina are two capillary filaments; they stand erect, and are of the length of the cup: the antheræ are roundish. The germen of the pistil is of a turbinate figure, and stands under the receptacle. The style is capillary, and of the length of the stamina; the stigma is obtuse, and emarginated. The fruit is a turbinate, oval capsule; it is hairy, composed of two valves, and contains two cells: it opens from the base to the apex. The seeds are placed one in each cell, and are oblong, and narrowest at the base.

Circæa.

*Circæa.**Enchanter's Nightshade.*

This is a very beautiful, as well as a very singular, plant. It rises to five, six, or ten inches, or more, high. It's root is oblong, white, and creeping, frequently jointed, and full of fibres. The stalk is round, of the thickness of a straw at the bottom, smaller all the way up, lightly hairy, and never much branched. It often rises single to the top; sometimes from about the middle of it's height it sends out a couple of branches, of two, three, or four inches long. The leaves stand in pairs, opposite to one another; they stand on pedicles of half an inch in length, and are broad, and of a sort of oval figure, but pointed, thin, of a pale green, and lightly indented at the edges. The upper part of the main stalk, and of the branches, runs up into a kind of spike, on which stand the flowers: they are very small, but very beautiful, and stand at distances, on short pedicles.

This elegant plant is common with us, and all over Europe, in woods, and among bushes. It flowers in April. C. Bauhine calls it, *Solanifolia Circæa dicta major*; Lobel, *Circæa Lutetiana*. There is, in reality, no other species of this genus, but authors have described the varieties of this under the names of distinct species. When it grows on starving ground, it has been called *Circæa minima*, and *Solanifolia Circæa Alpina*; and, in North America, where it grows very large, authors have called it, *Circæa latifolia Canadensis flore albo*.

DIANDRIA MONOGYNIA.

Division the Second.

Such as have regular corollæ, and the seeds contained in capsules.

VERONICA.

THE calyx of the Veronica is a perianthium, consisting of a single leaf, divided into four acute, lanceolated segments, and permanent. The corolla consists of a single petal; the tube is of the length of the cup, or nearly so: the limb is plain, and divided into four parts; the segments are oval, and the lower one is narrower than any of the rest; the segment overagainst it is broader than any. The stamina are filaments, smaller at the bottom than above, and bending upwards: the antheræ are two oblong. The germen is compressed; the style is capillary, of the length of the stamina, and declinate; the stigma is simple. The fruit is a capsule, of a turbinated, cordated figure, with a compressed apex; it is composed of two valves, and contains two cells, in each of which there are numerous, roundish seeds. The tube of the corolla is very different in the different species of this genus; in some it is extremely short, in others longer, and, in several species, the upper larger segment forms a kind of labium, or upper lip; and the other three form, together, a lower lip, but the lowest segment is always narrower than the others.

1. *Veronica floribus spicatis, foliis oppositis, caule procumbente.*

The common Veronica, with opposite leaves, spicated flowers, and procumbent stalks.

Common
Speedwell.

This is one of the most frequent species of Veronics, both with us and in most parts of Europe. It's stalks are long and procumbent; they lie upon the surface of the ground, and shoot out roots, as they run along; they are of the thickness of a packthread, and of a pale green colour, and lightly hairy; they are frequently jointed, and, at every joint, there grow two leaves; these are broad and short, somewhat hairy, and crenated round the edges, about half an inch in length, and a third of an inch in diameter, in dry places; in moist, often much larger. They are of a bitterish taste. The flowers stand in spikes, rising from the axæ of the leaves; they are small, and

and of a bluish, or pale red colour. The stalks are sometimes wholly procumbent, sometimes the ends of them rise up a little. This species is very common in meadows and pastures, and on heaths. C. Bauhine calls it, *Veronica mas supina & vulgarissima*, a name borrowed by many others. J. Bauhine calls it, *Veronica vulgarior folio rotundiore*. Linnaeus, in his Fl. L. *Veronica caule repente, scapulis spicatis, foliis oppositis, ovatis, strigosis*.

2. *Veronica floribus spicatis, foliis ternis.*

The ternate-leaved, spiked-flowered Veronica.

This is a very specious and beautiful plant. It grows to a foot and half, or more, in height; the stalk is round, of a pale green, and smooth, robust, and erect. The leaves stand usually three at a joint, sometimes more; they are somewhat like the leaves of the ptarmica, two or three inches long, very narrow, and deeply serrated at the edges. They are smooth, and of a dusky green colour: the stalk is sometimes quite single, sometimes it sends out two or more branches; the tops are formed into long and beautiful spikes of flowers; they are of a beautiful blue colour, and stand very thick together, when they are fallen. The seed-vessels appear, and are full of very small, round seeds. The root is small and not creeping, but it sends up new shoots in great number, from the base of the old stalk.

This beautiful species is not a native of England, but is common in many other parts of Europe, in dry, hilly pastures: Gerard and Parkinson call it, *Veronica cærulea*, and *Veronica spicata cærulea*. C. Bauhine calls it, *Lysimachia spicata cærulea*; and J. Bauhine, *Veronica spicata, recta, profunde serrata, quam lysimachiam cæruleam quidam vocant*.

3. *Veronica floribus racemosis lateralibus, foliis ovatis planis, caule repente.*

The lateral cluster-flowered Veronica, with oval leaves, and creeping stalks.

Brooklime.

The root of this species is composed of a number of white fibres. The stalk is round, smooth, thick, and succulent; it is sometimes of a pale green, but more frequently of a reddish colour; it is procumbent in the lower part, and sends out fibrous roots from the several joints into the mud. The upper part of the stalk rises to six or eight inches high, and both this and the procumbent part have, at every joint, two leaves: these are of a deep green colour, smooth and succulent; they stand on moderately long pedicles, and are crenated about the edges; they are of an oval figure, and an inch and half, or more, in length. The flowers stand in spikes, on pedicles growing from the axils of the leaves; they are of a beautiful blue colour; the capsules, which succeed them, are moderately large.

This species is common with us, and in all other parts of Europe, in shallow waters, and about the sides of ditches and rivers. C. Bauhine calls it, *Anagallis aquatica foliis subrotundo*; but he erroneously divides it into two species, a larger and a smaller, as it happens to grow in a better or worse soil. Dodonæus calls it, *Anagallis aquatica*; and Tournefort, *Veronica aquatica major folio subrotundo*.

4. *Veronica floribus racemosis lateralibus, foliis ovatis plicatis, dentatis.*

The lateral, cluster-flowered Veronica, with oval, plicated, and dentated leaves.

Wild germander.

The root of this species consists of a number of slender fibres. The stalk is round, of a pale green colour, and a little hairy: it is in part procumbent, and shoots out in that part fibres into the earth from every joint; it rises usually to the height of six or eight inches. The leaves stand in pairs, and are affixed to the stalk without pedicles: they are hairy, and deeply dentated about the edges, three quarters of an inch long, and half an inch broad, and of a pale, greyish, green colour: from the axils of these leaves there grow spikes of two or three inches long, on which stand a great number of very beautiful blue flowers; they are much larger than those of the brooklime, otherwise like them.

This plant is very common in our pastures in May, June, and July, and makes a very beautiful figure. C. Bauhine calls it, *Chamædrys spuria minor rotundifolia*. J. Bauhine, *Chamædrys spuria latifolia sive foetida*. Gerard and Parkinson, *Chamædrys sylvestris*.

These are the most different from one another, in their manner of growth, of the species of Veronica, and serve therefore to shew it's principal variations in form; the rest of the species are very numerous. The more singular are, 1. The bugle-leaved, spiked, Veronica of Wales. 2. The small, erect, spiked Veronica. 3. The scirpyllum-leaved Veronica; 3 The germander-leaved Veronica, with flowers on long pedicles. 4. The Veronica, with the flowers adhering to the stalks. 5. The upright Veronica, with divided leaves. 6. The ivy-leaved Veronica. 7. The long-leaved Veronica. 8. The narrow-leaved, scutellated Veronica. 9. The germander-leaved Veronica, with long pedicles to the leaves: These are all natives of England. 10. The Pyrenean, smooth-leaved Veronica. 11. The great, erect Veronica. 12. The broad-leaved, spiked Veronica. 13. The naked-stalked Veronica. 14. The clinopodium-leaved Veronica. 15. The hairy daisy-leaved Veronica. 16. The Alpine, shrub Veronica. 17. The American, tall Veronica, with three, five, or seven leaves of a joint. 18. The short-leaved, ever-green Veronica. 19. The lacinated-leaved Veronica. 20. The great, single-stalked Veronica. 21. The Veronica, with the lower leaves round. 22. The teucrium-leaved Veronica. 23. The vervain-leaved Veronica. 24. The cymbalaria-leaved Veronica. 25. The moneywort-leaved Veronica. 26. The olive-leaved, water Veronica. 27. The nettle-leaved, spiked Veronica; and, 28. The hoary, obtuse-leaved Veronica.

Several of the species of this genus are famous in medicine; the common speedwell is a good antiscorbutic, and has lately been celebrated in the gout and rheumatism. The water brooklime is also one of the antiscorbutics of the shops, and it's juice is always made a part of the spring juices, given against those complaints.

PÆDEROTA.

THE calyx of the Pæderota is a perianthium, consisting of a single leaf, divided into five acute linear segments, and permanent. The corolla consists of a single petal. The tube is cylindric, and of the length of the cup; the limb is formed, as it were, into two labia: the upper lip is oblong, hollow, and narrow; the lower lip is broader, and is divided into three equal segments at the extremity. The stamina are two filaments, of the length of the corolla, and bend downwards; the antheræ are asurgent. The germen of the pistil is roundish; the style is capillary, and of the length of the stamina; the stigma is truncated. The fruit is an oval capsule, compressed at the top and bifid, composed of four valves, and containing two cells, in each of which there are numerous oblong, obtuse seeds, which adhere to a columnar receptacle. This genus is very nearly allied to the Veronica; but, though Linnæus seems desirous of referring it to it, there seems more reason for the keeping them separate.

Micheli has described this genus under the name of *Bona rota*.

1. *Pæderota foliis ovatis crenatis.*

The Pæderota, with oval, crenated leaves.

The root is fibrous and white; the stalks are round, slender, and scarce erect. The leaves stand in pairs, and are near an inch long, and little less in breadth; they are of a dusky green, and deeply serrated. The flowers are moderately large, and blue; they stand in short, thick spikes. It is a native of Italy. Micheli calls it *Bona rota montana italica chamædrys folio rotundiore spica cærulea habitiore*.

The other species are, 1. The narrower-leaved Pæderota; and 2. The yellow-flowered Pæderota.

JUSTICIA.

THE calyx of the Justicia is a very small perianthium, formed of a single leaf, with five indentings at the top, acute, erect, and narrow: the corolla consists of a single petal. The tube is gibbous, the limb ringent. The upper lip is oblong and emarginated; the lower lip is of the same length with that, and is reflex, and obtusely trifid. The stamina are two subulated filaments, they are hid under the upper lip of the flower; the antheræ are erect and bifid at the base. The fruit is an oblong, obtuse capsule,

capsule, narrow at the base; composed of two valves, and containing two cells; (the partition placed contrariwise to the valves,) and opens by an elastic unguis: the seeds are roundish.

The upper lip of the corolla is varicose in it's situation. The unguis of each locule, by which the capsule is expanded, constitutes the essential character of the genus.

This genus comprehends the *Justicia* of Houston, the *Adhatoda* of Tournefort, and the *Echelium* of Rivinus.

1. *Justicia arborea foliis lanceolato-ovatis, bracteis ovatis persistantibus, corollarum galea concava.*

The arborescent Justicia, with lanceolato-ovate leaves, with ovated bractes, and a hollow galea.

This is a beautiful ever-green shrub: it grows to four or five feet high. It's root is large, woody, divided into three or four branches, and furnished with a multitude of fibres, of a dusky brownish colour, and styptic taste; the trunk grows to an inch and half, or more, in diameter. It's bark is of a pale brown, smooth, and glossy: it divides into a number of branches, which are thin and tough. The leaves are moderately large, and grow in pairs; they are of a pale green colour, and tender structure; they are broad at the base, and terminate in a point. The flowers stand in spikes, with leaves intermixed, but it seldom produces them with us.

It is a native of Ceylon, but is to be met with in many of our stoves, where it thrives very well, but does not flower. Tournefort, Plukenet, and most other authors call it, *Adhatoda Zeylanensium*. Linnaeus, in the Hort. Cliffort, *Justicia foliis ovato-lanceolatis, spicis soliosis, florum galea concava*.

2. *Justicia herbacea, fructu parvo.*

The herbaceous Justicia, with a very small fruit.

This is an extremely elegant plant. The root is oblong, white, and of the thickness of a straw, or more: the stalk rises to two feet in height, and is round, and of a pale green colour, jointed, and not quite strait. The leaves stand in pairs, at an inch, or more, distance, opposite to one another; they are of a yellowish green colour, and of an irregularly oval figure, broadest near the base, and pointed at the extremity. The tops of the stalks and side branches have flowers in spikes on them; the fruit is very small, and the seeds are heart-fashioned.

This is a native of the East Indies, and is rarely met with in our stoves. The late Lord Petre had it: elsewhere I have not seen it. Tournefort calls it, *Adhatoda herbacea, circeæ foliis, parvo fructu*.

The other species of the *Justicia* are, 1. The small and white-flowered, mallow-leaved, Indian *Justicia*. 2. The *Justicia*, with a very narrow lip, bent backwards. 3. The smaller-leaved *Justicia*; and, 4. The *Justicia*, with short pedicles to the leaves.

GRATIOLA.

THE calyx of the *Gratiola* is an erect perianthium, composed of a single leaf, divided into five segments of a subululated figure, and permanent. The corolla is monopetalous and ringent: the tube is of an angular figure, and is longer than the cup. The limb is small, and divided into four parts. The upper segment is broad, reflex, and emarginated; the others are strait and equal. The stamens are five in number, but three of them are short and sterile, two only of power and efficacy, whence it properly belongs to this class. They are all of a subululated figure, and shorter than the corolla; the two which are perfect are affixed to the tube of the petal, and have each a round anthera on it. The germen of the pistil is conic; the style is strait and subululated, the stigma is bilabiated, but, after impregnation, the two lips fall together. The fruit is an oval, pointed capsule, composed of two valves, and containing two cells. The seeds are numerous and small.

The essential characteristic of this genus is, that it has three castrated stamens. It has been confounded with the *digitalis* by many authors, but it differs in almost all the particulars from it.

There is but one known species of it.

Gratiola

*Gratiola.**Hedge Hyssop.*

The root of this is oblong, of the thickness of a goose-quill, and creeps under the surface of the earth: it is white, and jointed, and sends out a multitude of fibres from the several joints. The stalk is round, of a reddish colour at the bottom, and greenish toward the top; it grows to five, six, or eight inches high. The leaves stand in pairs opposite to one another, and at small distances: they are oblong, broadest in the middle, and terminate in a point; they usually are even at the edges, but sometimes are lightly dentated. The flowers stand on short branches, arising from the axils of the leaves: they are single, oblong, striated, and are of a yellowish colour at the base, and white or reddish in all other parts of the surface, and a little yellowish within. The whole plant is remarkably bitter.

It is frequent in Germany, Italy, and France. C. Bauhine calls it, *Gratiola centauroides*. J. Bauhine simply, *Gratiola*; others, *Gratia Dei* *centaureum palustre*, and *Polemonium palustre amarum*.

It is a violent purge and vomit. People, in places where it is to be had, often take an infusion of it in dropries, jaundices, and many other chronic cases. It is a rough medicine, but a powerful one.

PINGUICULA.

THE calyx of the *Pinguicula* is a small, ringent, permanent perianthium. The upper lip of it is erect, and divided into three segments; the lower lip is reflex, and divided into two. The corolla is ringent, and consists of a single petal: the longer lip is strait, obtuse, trifid, and supine: the shorter lip is bifid, more obtuse, and patent. The nectarium is of a corniculated figure, and is produced from the basis of the petal. The stamina are two bifid filaments; one of the branches is cylindric and crooked, it turns upwards, is shorter than the cup, and has it's anthers; the other is shorter than this, and produces a glandule: the antheræ are roundish. The germen of the pistil is globose: the style is very short; the stigma is bilabiate: the upper lip of it is large, plane, and reflex, and covers the antheræ; the lower lip is very narrow, erect, bifid, and shorter. The fruit is an oval capsule, compressed at the top, and containing only one cell, in which there are several small seeds, of a cylindric figure, and a loose receptacle.

1. *Pinguicula nectario cylindræo longitudine petali.*
The Pinguicula, with a cylindric nectarium of the length
of the corolla.

Butter-
wort.

This is the species of *Pinguicula* found with us, and called Yorkshire Sanicle. The root of this species consists of a tuft of fibres moderately thick, but not very long; from this root there rise four, five, or more leaves: these lie flat on the ground, and are of a yellowish green colour, and are soft and unctuous on the surface, as if rubbed over with oil or butter. They are two inches long, about an inch broad, and obtuse at the point: the edges are even; and the upper surface of the leaf, if nicely examined, is found to be covered with a fine silky down or hairiness. From among these leaves rise up two, or three, or more pedicles, sometimes only one; these are three or four inches in height, and on the top of each stands a single flower, of a purplish, bluish, or white colour, somewhat resembling a violet in it's general form.

This species grows in boggy places in some parts of England, but it is not common with us; in Sweden, Germany, and Denmark, it is much more abundant. C. Bauhine and Tournefort call it, *Pinguicula Gesneri*, and many others borrow the same name; some call it simply *Pinguicula*, but that is erroneous, as there are other species of the same genus.

This species varies in the size and in the colour of the flower very considerably, in consequence of the places it grows in. Linnæus Fl. Lap. mentions a variety of it with a purple flower, and the labia white. The large purple-flowered *Pinguicula* of Ray is a variety of this species. The length of the spur behind the flower varies also extremely;

ly; and to this, as well as to the size and colour, are owing many of the supposed distinct species of the English botanists.

2. *Pinguicula nectario conico petalo brevior.*

The Pinguicula, with a conic nectarium, shorter than the corolla.

The root of this species is composed of two or three small fibres, each of which divides into three or four ramifications; from this root there rise three, four, or five leaves, sometimes more: they are fatty on the surface, and of a pale green colour, narrowest at the base, broadest near the other extremity, and terminate in an obtuse point. The stalk usually rises single in the midst of these leaves; it is two or three inches high, and supports a single flower, somewhat of the external shape of a violet, of a white colour, with an elegant yellow spot in the palate of the corolla, where there is a grey one in the common kind. The great distinction, however, is in the nectarium, which in this species is short and conic. Ray seems to mean this by that he calls, *Pinguicula flore albo minore calcar brevissimo*. The Bauhines seem also to have known it as distinct from the former, though they did not well understand what the distinction was. We have it on the bogs in Westmoreland, but very scarce; it is more frequent in Sweden, Norway, and some parts of Germany.

3. *Pinguicula scapo villoso.*

The hairy-stalked Pinguicula.

This is the smallest of all the *Pinguicula* kind. Its root is composed of three or four fibres, which divide each into a few ramifications: from this there rise three or four leaves, about three quarters of an inch in length, half an inch in breadth, and very obtuse at the ends; they are of a pale green colour, and fatty surface. In the midst of these rises a single stalk, sometimes two, or more, on the top of which stands a single flower, smaller than in either of the former species, and of a pale blue, or pale red colour. The stalks are covered with a fine soft hairiness, which is the essential character of the species.

This is found in Cornwall, and in some other parts of England; in Lapland also, and in some parts of Germany, it has been lately discovered. Ray calls it, *Pinguicula flore minore carneo*. Rudbeck, *Pinguicula Lapponum vel Alpina minima flore purpureo, lili ad radicem ternis rotundis*.

UTRICULARIA.

THE calyx of the *Utricularia* is a very small perianthium, composed of two oval, concave, deciduous leaves. The flower is of the ringent kind: it consists of a single petal. The upper lip is plane, obtuse, and erect; the lower lip is large, plane, and entire: the palate of the flower is cordated, and appears prominent between the lips: the nectarium is corneolated, and arises from the base of the petal. The stamina are two very short and crooked filaments; the antheræ are small and coherent. The germen of the pistil is globose, the style is capillary, and of the length of the cup; and the stigma is conic. The fruit is a large, globose capsule, having only one cell, and in it a number of small seeds.

This genus takes in the *lentibularia* of Rivinus, Vaillant, and Dillenius.

1. *Utricularia nectario conico longiore.*

The Utricularia, with a longer, conic nectarium.

The root of this species is thin, whitish, and creeping; from this arise a multitude of branches, which divide into many others, and are furnished with finely divided or divaricated leaves: these branches, with their leaves, lie flat upon the mud, and send out fibrous roots at several distances, by which they are fastened down to it. At the same parts of these branches, from whence the roots grow, there are also affixed a very singular kind of round hollow bodies; they are a kind of pellucid vesicles, or *Utriculi*, and have only one aperture. These are very numerous on the branches: the genus has its name from them, but it is not easy to ascertain their use. From these branches,

in several parts, there arise naked stalks of six or eight inches high: these are simple, of the thickness of a packthread at the base, and on their upper part they bear six or eight flowers moderately large, of a beautiful yellow colour.

This species is not uncommon with us in standing waters, and it is yet more frequent in Germany. Rivinus calls it, simply, *Lentibularia*. Vaillant, *Lentibularia major*. C. Bauhine, *Millefolium aquaticum lenticulatum*. J. Bauhine, *Millefolium aquaticum flore luteo galericulato*. Rudbeck calls it, *Filipendula aquatica five millefolia leoticulata*.

There is only one more species of this genus, which is the lesser *Utricularia*, with a shorter conic nectarium; this floats on the water in some of our rivers and ponds.

DIANDRIA MONOGYNIA.

Division the Third.

Such as have irregular corollæ, and naked seeds.

VERBENA.

THE calyx of the Verbena is a tubulated, angular, linear perianthium, composed of a single leaf, marked with five indentings at the verge, and the fifth denticle truncated. This cup is permanent. The corolla consists of a single petal: the tube is cylindric, strait, and of the length of the cup. The extremity of it is dilated and incurvate: the limb is patent, and lightly divided into five semiorbicular and equal segments. The filaments are four in number, but usually two of them want antheræ, and serve to no purpose in generation. The filaments are all short, and buried within the tube; the two naked ones shorter than the rest. The germen of the pistil is square, the style is simple, capillary, and of the length of the tube: the stigma is obtuse: the seeds are either two or four in number, after every flower; and they lie naked, or with a very thin and scarce distinguishable covering in the calyx.

This genus comprehends the Verbena of Tournefort and others; the Sherardia of Vaillant; the Blairia of Houston; the Kempferia of Houston, and the Valerianelloides of Boerhaave.

In the Sherardia, the antheræ are only two, and the seeds in like manner two: in the Blairia, the antheræ are two, the seeds echinated, and the calyx inflated: in the Verbena of authors, the antheræ are four in number, and the seeds obtuse: in the Kempferia, the stamina are two, and the calyx has four acute setæ.

1. *Verbena foliis multifido-laciniatis, spicis filiformibus.*
The Vervain, with multifid, laciniated leaves, and filiform spikes.

**Common
Verbain.**

The root of this species is oblong, white, of the thickness of a large packthread, and of a bitter taste: the plant rises to two feet in height; the stalk is square, and very rigid and firm, a little hairy, and somewhat branched. The leaves stand in pairs, at small distances on the stalk; they are a little hairy, and of a dusky green colour: they are oblong, and very deeply sinuated, somewhat in the manner of oak-leaves; the two lowest sinus's are always larger, and deeper than any of the others. In the axæ of the leaves, and at the top stalks, stand very long and thin spikes of flowers. The colour of the flowers is a pale blue, and they are very small.

This species is common with us in dry and barren places. C. Bauhine calls it, *Verbena communis cæruleo flore*. J. Bauhine, *Verbena vulgaris*; and Dodonæus, *Verbena recta*.

2. *Verbena tetrandra spicis filiformibus, foliis multifido-lacinia-
tis, caulibus
numerosis.*

*The thin-spiked Vervain, with multifid, lacinated leaves, and numerous
stalks.*

This is a very robust plant: it grows to four feet high; its root is white, thick, and oblong; its stalks are square, rigid, and somewhat hairy: four or more of these arise from the same root, and, each of them dividing into many branches, the whole plant has a very bushy appearance. The leaves stand in pairs, opposite to one another, at small distances; they have moderately long pedicles; they are two inches and a half in length, and an inch and half in breadth in the broadest part: they are of a dusky green colour, largest near the base, and terminate in a point; they are of a rigid structure, and very deeply lacinated. The flowers are much larger than those of the former species, and of a pale blue; they stand in long, thin spikes. This species is a native of Spain and Portugal. It is to be met with in some of our gardens. Haller calls it, *Verbena urtica folio Canadensis, foliis incis, flore majore.*

The other principal species of Vervain are, 1. The short-spiked, nettle-leaved, American Vervain. 2. The narrower-leaved, American, nettle-like Vervain, with short spikes, and purple flowers. 3. The white-flowered, narrower, nettle-leaved, American Vervain, with long spikes. 4. The broad-leaved, tall, Portugal Vervain. 5. The fine-leaved Vervain. 6. The small, green-leaved Vervain, flowering at the joints. 7. The American Vervain, with numerous spikes, and very narrow, nettle-like leaves. 8. The lanceolate, amplexicaule leaved Vervain, with fasciated spikes. 9. The long and thin-spiked Vervain, with hastated leaves. 10. The thin-spiked Vervain, with undivided, serrated leaves. Of all these species, not one, except the first, is a native of England.

Vervain is a cephalic and carminative; it is good in head-achs, nervous complaints of all kinds, and in obstructions of the viscera. It is greatly recommended also by some in diseases of the breast and lungs.

LYCOPUS.

THE calyx of the *Lycopus* is a tubulated perianthium, composed of one leaf, and lightly divided at the end into five narrow and pointed segments. The corolla consists of a single petal: the tube is cylindric, and of the length of the cup: the limb is divided into four parts, obtuse and patulous; the segments are nearly equal in length; the upper one is broad and emarginated, the lower one smaller. The stamina are two filaments, longer than the corolla, and inclined towards its upper segment. The antheræ are small: the germen of the pistil is quadrifid: the style is capillary, straight, and of the length of the stamina: the stigma is bifid and reflex. There is no fruit, but the seeds are four after every flower, and are lodged in the cup.

This genus comprehends the *Lycopus* of Tournefort, and the *Pseudomarrubium* of Rivinus.

1. *Lycopus foliis indivisis.*
Lycopus, with undivided leaves.

**Water Hoar-
bound.**

The root of this species is long, slender, and creeps under the surface of the ground. It sends down fibres in great abundance, and from the several parts of it there rise a great number of stalks. These stand singly: they grow to be three feet high, and are square, green, hairy, and hollow: they usually send off some, but not many, branches. The leaves stand in pairs, on the stalk, at small distances: they are oblong, of a pale green colour, very rugose, and deeply serrated about the edges; they terminate in a point. They have no pedicles, and the lower ones are usually somewhat divided, especially toward the base; the rest are only serrated. The flowers grow in clusters round the stalks; at the insertions of the leaves, they are small, white, and remain but a little time on the plant. The cup remains long, and contains the seeds.

This

This species is extremely common with us in meadows, and by ditch-sides. Tournefort calls it, *Lycopus palustris glaber*. Rivinus, *Pseudomarrubium vulgare palustre*; and C. Bauhine, *Marrubium palustre glabrum*.

This herb was once used for dying black; linnen and cloaths were dyed by means of it.

2. *Lycopus foliis laciniatis hirsutis*.

The hairy, laciniated-leaved Lycopus.

The root of this species is composed of several long and jointed flagellæ, which creep upon, or just under, the surface of the ground. The stalks are square, and more hairy than those of the former; they grow to about eighteen inches high. The leaves stand in pairs at the distance of an inch, or more; they have no pedicles, but are affixed immediately to the stalk. They are about an inch and half long, and three quarters of an inch in diameter: they are hairy, and of a pale green colour, and are laciniated or divided into segments, down to the middle rib. The segments are sharp-pointed, and crenated at the edges. The flowers are small and white; they stand in clusters round the stalk, at the base of the leaves.

This species is not a native of England, but it is common in many parts of France. C. Bauhine calls it, *Marrubium palustre, hirsutum, tenuius laciniatum*; and Tournefort, *Lycopus foliis tenuis laciniis dissectis*.

The other species of the Lycopus are, 1. The hairy Lycopus, with undivided leaves. 2. The smooth, Canada, laciniated Lycopus.

ZIZIPHORA.

Amethysica.

THE calyx of the Ziziphora is a very long, cylindric, and tubular perianthium; it is composed of one leaf, and is hairy, striated, and divided at the end into five very small segments, and is bearded. The corolla is ringent, and composed of a single petal; the tube is cylindric, and of the length of the cup; the limb is very smooth; the upper lip is ovated, erect, emarginated, and obtuse: the lower lip is broad and patent, and is divided into three rounded, equal segments. The stamina are two simple patent filaments, of the length of the corolla; the stigma is acuminate and inflex. There is no fruit, but the cup contains four seeds, which are oblong and obtuse, gibbous on one side, and angular on the other.

1. *Ziziphora foliis lanceolatis, floribus lateralibus*.

The Ziziphora, with lanceolated leaves, and lateral flowers.

The root of this species is composed of a number of moderately thick, white fibres; from this rise three or four stalks. The plant grows to six, eight, or ten inches in height. It's stalk is rigid and firm, it's leaves of two different shapes; those near the root, and on the lower part of the plant, are short, obtuse, and of a roundish figure; the others are narrow and oblong narrowest at the base, broadest in the middle, and terminate in a point: they are smooth and even at the edges, and of a dusky green colour. The flowers stand in the axæ of the leaves, in little clusters; they are small, and of a pale red.

This species is a native of Syria, but it succeeds very well in our gardens, where it bears the open air; it is an annual, but rises very easily from seed.

DIANTHERA.

THE calyx of the Dianthera is a perianthium, divided into five parts. The segments are equal, and of a linear-lanceolated figure, and equal in size; the whole cup is of the length of the corolla, and is permanent. The corolla is composed of a single petal, and is of the ringent kind. The tube is patulous, and of the length of the limb. The upper lip is of an ovated figure; the lower lip is divided into three oblong and equal segments. The stamina are two filaments, affixed to the back of the corolla, and of the length of the upper lip; the antheræ are double on each filament,

lament, they are of a kidney-like shape, and one of them is somewhat higher than the other. The germen of the pistil is of an oval figure; the style is of the length of the stamina: the stamen is slender and bifid, and it's lower segment is bent backward.

This genus differs from sage in it's cup, being divided into five parts; from all the other genera of this class, by the double antheræ.

Of this genus there is only one known species.

DIANTHERA.

The root is composed of a great number of thick fibres: the stalk is tender, of a dusky green, and erect. The leaves stand in pairs, and are of a lanceolated figure; they are smooth, even at the edges, and of a deep green, and have no pedicles. The flowers stand on peduncles arising out of the axils of the leaves; they are disposed in a kind of spike, and do not grow two at a joint, but alternately.

It is a native of Virginia; it was first discovered by Mr Clayton, and is described by Gronovius, in his Flora Virginica.

SALVIA.

THE calyx of the Salvia is a tubulated, striated perianthium, composed of one leaf, compressed, gradually widening toward it's top, and at the verge erect and bilabiated; the upper lip is terminated by three points, the under one by two. The corolla consists of a single petal; the tube toward the upper part is large and compressed, the limb is ringent; the upper lip is hollow, compressed, crooked, and emarginated; the lower lip is broad, and divided into three segments, of which the middle one is large, roundish, and emarginated. The stamina are two filaments bifid from the middle, their branches separated by an obtuse sinus; one of the branches of each filament is longer than the other, and is hid under the upper lip of the flower, and on this branch stands the anthera; on the other branch only an obtuse head. The germen of the pistil is quadrifid; the style is long and capillary, and situated as the stamina. The stigma is bifid; there is no fruit: the seeds are lodged in the cup, which closes a little at the top, to keep them in; they are four in number after every flower.

This genus comprehends the Salvia, the Horminum, and the Sclarea of Tournefort, and other authors. The singular bifurcation of the stamina constitutes the essential character of it. There are found in many of the species the rudiments of two steril stamina, in the mouth of the corolla, under the upper lip. The obtuse head, which terminates the shorter branch of the filaments, in some is callous, and resembles a glandule; in others it has the appearance of the rudiment of an anthera, and has some farina.

1. *Salvia foliis lanceolato-ovatis, integris, crenulatis, floribus spicatis, calycibus acutis.*

The lanceolato-ovate-leaved Sage, with spiked flowers, and acute cups.

Red
Sage.

The root of this species is hard, oblong, and woody, variously branched, and of a brown colour; from this rise several stalks, woody, hard, branched, and variously contorted and bent: the younger branches are square, hairy, and of a greenish or reddish colour. There arise a great number of leaves immediately from the root, and others stand on the stalks in pairs, opposite to one another: they stand on long pedicles, and are very rugose, and a little hairy. They are of an oblong figure, obtusely pointed at the end, and crenated round the edges, and are sometimes of a pale green, but more usually of a reddish colour. The flowers stand in a kind of spikes at the tops of the stalks; they are large, and of a beautiful blue colour, with more or less reddishness in it.

This species is a native of Italy, and of some parts of France. It is cultivated in almost all our gardens, and is perennial and sufficiently hardy.

2. *Salvia foliis rugosis oblongo-cordatis, floralibus calyce longioribus.*

The rugose and oblong cordated-leaved Sage, with the floral leaves longer than the calyx.

Clary.

The root of this species is oblong, single, woody, of a brown colour, and covered with

with fibres. Its taste is hot, and somewhat aromatic. The stalk is square, and of a third of an inch in diameter; it grows to three or four feet high: it is lightly hairy and jointed, and it sends out branches in pairs, cross-wise one to another. The leaves are placed in pairs opposite to one another. They are of a greyish colour, very rugose and hoary; they stand on long pedicles, and are seven or eight inches long, and some or five over in the broadest part. They are largest at the base, somewhat cordate, and dentated about the edges. The leaves toward the upper part of the stalks are smaller, but of the same shape. The flowers grow on the tops of the main stalks and branches in very long spikes. They are very large, of a pale bluish-grey colour, and stand in circles round the stalks. The whole plant has a very strong and disagreeable smell, and a bitter taste. It is a native of Syria, but it thrives very well in the open air in our gardens. C. Baubine calls it, *Horminum (Sclarea) dictum*. J. Baubine, *Gallitricium sativum*; others, *Horminum vulgare*.

3. *Salvia foliis simplicibus dentato-pinnatis, rugosis, verrucosis.*
The simple, dentato-pinnated-leaved Sage.

The root of this species is oblong, and of a whitish colour: the stalk is square, not solid, but containing a spongy pith. It is hoary on the surface, and whitish. The leaves stand in pairs: they are oblong, and very deeply lacinated, so as to give some resemblance of a stag's horn. They are very rugose, and rise up in several places into a kind of protuberances. They are covered with a white, hoary matter, and are of a strong smell. The flowers grow in long series, on the tops of the main stalk and branches; they are of a middle size, between those of common Sage, and the common clary, and are of a pale yellowish colour.

This species is a native of Persia, but it thrives very well with us in the open air, and is in many of the botanical gardens. This is one of the *Sclarea* of Tournefort; he calls it, *Sclarea rugosa verrucosae folio laciniato*. Morison calls it, *Horminum ceratophyllum, rugosum, flore sulphureo*; and Plukenet, *Horminum folio rugoso cornu cervi experimente*.

4. *Salvia foliis oblongis, ovatis, obtusis, equaliter crenatis, corollae galea semi-orbiculata.*
The oval, oblong-leaved Sage, with a semi-orbicular galea of the flower.

The root of this species is oblong and slender: the stalks square, green, and a little hairy; the leaves of an oval, oblong figure, and crenated round the edges: the lower ones have long pedicles, the upper ones are sessile; the floral leaves are of a cordate figure. The flowers stand about, three on a side, in the axils of the leaves. The galea is rounded, and not emarginated; the lower lip is entire and emarginated, and the lateral denticles are prominent. The pistil is crooked, and scarce appears.

This is a native of Syria, but it bears the cold of our climate very well. Tournefort calls it, *Horminum coma viridi*.

The other principal species of this large genus are of the Sage-kind: 1. The broad-leaved, serrated Sage. 2. The arborescent Sage, with divided leaves. 3. The great Cretic Sage. 4. The large, broad, and roundish-leaved Sage. 5. The smaller auriculated Sage. 6. The narrow-leaved, serrated Sage. 7. The broad-leaved, wormwood Sage, with red flowers. 8. The broad-leaved, hairy, and viscid Oriental Sage, with purple flowers. 9. The African, shrubby Sage, with scorodonia leaves, and violet-coloured flowers. 10. The shrubby African Sage, with roundish blue-green leaves, and large yellow flowers. 11. The undated-leaved pomiferous Sage. 12. The lavender-leaved Spanish Sage. 13. The white-flowered, wormwood Sage.

Of the *Horminum* kind are, 1. The wild Clary. 2. The meadow Clary, with a very small flower. 3. The betony-leaved, blue-flowered, spring Clary. 4. The hairy, ovated-leaved Clary. 5. The vervain-leaved Clary. 6. The oak-leaved Clary. 7. The little-branched Egyptian Clary. 8. The little betony-leaved procumbent Clary.

Of the *Sclarea* kind are, 1. The great lanuginous Clary, called *Æthiopic* by the old authors. 2. The jagged-leaved, very hoary *Sclarea*. 3. The asphodel-rooted Clary. 4. The glutinous Pyrenean Clary, with sinuated leaves. 5. The sinking, hairy, white-flowered Clary. 6. The great blue-flowered Clary. 7. The serrated-leaved, meadow Clary. 8. The ovated-leaved, great Clary. 9. The triangular, dentated-leaved

leaved Clary. 10. The hairy-stalked, triangular-leaved Clary. 11. The helianthem-leaved African Clary. 12. The dwarf lacinated Clary; with large flowers.

The virtues of the plants of this genus are very considerable. The common Sage is a sudorific and detergent. The Clary is famous in hysteria and hypochondriac complaints, and is also esteemed a cordial, and a provocative to venery.

ROSMARINUS.

THE calyx of the Rosmarinus is a tubulated perianthium formed of one leaf, compressed at the top, and bilabiate; the upper lip entire, and the lower bifid. The corolla consists of a single petal: the tube is longer than the cup; the limb is ringent. The upper lip is erect, short, divided into two segments, and has its edges turned back: the lower lip is reflex, and divided into three segments, of which the middle one is much the largest, and is hollow, and narrow at the base. The lateral segments are narrow and acute. The stamina are two tubulated filaments, turned toward the upper lip, and longer than it. The anthers are simple: the germen of the pistil is quadrifid; the style in figure and situation resembles the stamina; the stigma is simple and acute. Every flower is succeeded by four oval seeds, which are lodged in the cup. This genus is very nearly allied to the salvia. There is but one species of it,

Rosmarinus. Rosemary.

This is a low, but considerably robust, shrub: the root is long, variously disarticulated, woody, and furnished with a number of fibres. The stem is hard and firm, and covered with a brown bark, which is full of cracks and wrinkles. The younger shoots are round, green or whitish, and tender; the leaves are oblong and narrow, of a very dark green on the upper side, and whitish underneath. They stand thick on the stalks, and are firm, rigid, and of a very pleasant smell: the flowers are of a greyish white. Rosemary is a native of Spain and Greece: it thrives tolerably well in our gardens in the open air.

It is a very considerable plant in medicine. It enters many of the compositions, as a cephalic and nervine; and the Hungary water of the perfumers is made of it. The upper parts of the branches, when loaded with flowers, are distilled in spirit of wine for this purpose.

MONARDA.

THE calyx of the Monarda is a tubulated, cylindric, striated perianthium, consisting of a single leaf, divided into five short and equal segments at the rim. The corolla consists of a single petal: the tube is cylindric, and longer than the cup; the limb is ringent. The upper lip is strait, narrow, and undivided; the lower lip is broad, reflex, and divided into three segments: the middle segment is oblong, narrow, and emarginated; the lateral ones are shorter and obtuse. The stamina are two setaceous filaments, of the length of the upper lip of the corolla, in which they are inclosed and surrounded. The anthers are compressed, truncated above, and convex below, and erect. The germen of the pistil is quadrifid; the style is capillary, and involved in the upper lip along with the stamina; the stigma is bifid and acute; after every flower there grow four seeds of a roundish figure; these are lodged naked in the cup.

This genus includes the *Origanum spurius* of Rivinus.

1. *Monarda capitulis terminalibus caule obtuse angulato.*

The obtusely angular-stalked Monarda, with terminatory beads.

The root of this species is composed of a great number of fibres: the stalks are usually obtusely quadrangular; they rise to a foot and half in height, and are hairy and branched. The leaves are oblong and narrow, and of a pale green colour; they much resemble those of the common *Lythamachia filiquosa* of authors. They grow irregularly, but very thick and close upon the stalk: at the top of the main stalk and of the branches there stand clusters of smaller ones, ten or twelve in a cluster, disposed orbicularly; these surround a cluster of the flowers, which are formed into a rounded but flat bead, composed of a multitude of long tubular flowers, like little pipes, of a purple or red colour. From this tuft of leaves, and head of the flower, there not unfrequently rises another, supported on a short stalk; in this case the

the plant is said to be prostratus. The whole plant is covered with a hoary lanugo, and smells fragrant and aromatic. Its taste is very pungent and acrid, burning the mouth, on taking the least piece of it into it: the root is quite insipid.

This species is perennial; it flowers in August. It is a native of Canada, and some other parts of North America. It is preserved in the green-houses of our ingenious people, and flowers there regularly. Cornutus, to whom we owe the knowledge of it, calls it, *Origanum fistulosum Canadense*; Morison calls it; *Clinopodium Canadense majus, hirsutum, floribus fistulosis*. Linnæus, in his *H. Cliffert.* *Monarda floribus capitatis caule obtuso.*

2. *Monarda floribus verticillatis corollis punctatis.*

The verticillate Monarda, with punctated flowers.

The root of this species is composed of a number of white fibres, insipid to the taste. The plant rises to eight or ten inches high: the stalk is square, and the leaves oblong, narrow, and of an extremely fragrant smell. The flowers stand in clusters, in a verticillate manner, surrounding the stalks: there grow under every cluster of them ten or twelve reddish leaves; the flowers themselves are large, and of a beautiful yellow colour, and are variegated with purple spots. This species is a native of Virginia, but it is not easy to make it stand more than the first year in our gardens, though naturally a perennial plant.

The *Monarda* have improperly been ranked among the *clinopodia* and *ocyma* by most authors.

COLLINSONIA.

THE calyx of the *Collinsonia* is a small perianthium, composed of a single leaf, divided into five short and equal denticles at the extremity; the three upper ones are convex and inflex, and the two lower ones patent and subulatel. The whole cup is permanent: the corolla is monopetalous and unequal: the tube is of a conico-cylindrical shape, and is much larger than the cup: the limb is quadrifid and erect: one of the segments is very long, and is divided to the middle into other smaller, ramose, and capillary laciniae. The segment, opposite to this, is very small, emarginated, and acute: the lateral or alternate ones are opposite to one another, and are erect, entire, and very small. The stamina are two erect and very long setaceous filaments: the antheræ are simple: the germen of the pistil is globose; the style is setaceous, of the length of the stamina, and inclines to one side; the stigma is bifid and acute. The seed is single, and of a globular figure, and is contained in the bottom of the cup.

Of this genus there is but one known species.

COLLINSONIA.

The root is composed of a multitude of white and thick fibres. The stalk is square, and grows to three or four feet high. The leaves stand on pedicles, and are large, and of an obscure green, broadest near the base, and terminate in a point; they are deeply serrated round the edges. The flowers are numerous, and moderately large; they are of a pale red. It is a native of North America, but is now frequent in our gardens. None of the old authors were acquainted with it.

MORINA.

THE calyx of the *Morina* is double: the perianthium of the fruit is of a cylindrical figure, tubulous and permanent; it is composed of a single leaf, dentated at the verge: two of the opposite denticuli are longer than the rest, and all of them are subulatel and acute. The perianthium of the flower is bifid, tubulous, and composed also of one leaf: the segments are emarginated, obtuse, erect and permanent, and are of the size of the others.

The corolla consists of a single petal: the tube is extremely long, large at the top, and somewhat crooked; at the base it is thin and capillary. The limb is plain, obtuse,

tuse, and bilabiate: the upper lip is small and semibifid; the lower lip is divided into three obtuse segments, the middle one of which is longer than the others. The stamina are two setaceous filaments, shorter than the limb; they stand parallel, and press the style. The antheræ are erect and approximate, and of a cordated figure: the germs of the pistil is globose, and is placed under the receptacle of the flower: the style is capillary, and longer than the stamina; the stigma is peltated, capitated, and inflex. After the flower there appears a single naked seed, which is coronated with the cup of the flower, and stands in the other cup.

This genus comprehends the *Morina* of Tournefort, and the *Diotrothea* of Vaillant. Of this there is but one known species.

MORINA.

The root is oblong, slender, white, and furnished with a few fibres: the radical leaves are eight inches long, moderately broad, divided at the edges, and of a dusky green. The stalks are erect and robust; the leaves stand usually two at a joint; sometimes, though less frequently, there are four together: the flowers stand on the tops of the branches in clusters, or heads, and are small and reddish. It is a native of the East. Vaillant has described it under the name of *Diotrothea carlinæ foliis ex adverso binis*; Tournefort, under that of *Morina Orientalis carlinæ folio*.

Class the Second. Order the Second.

DIANDRIA DIGYNIA.

Plants which have two stamina and two styli in each flower.

BUFFONIA.

THE calyx is a perianthium, consisting of four leaves; the corolla consists of four petals: the stamina are two; the styles are also two; and the fruit is a capsule, containing only one cell, but in it a number of small seeds.

Of this genus there is but one known species.

BUFFONIA.

The root of this plant is oblong, slender, and furnished with a number of fibres, whitish and flexible. The stalk rises to six or eight inches high, it is round, and very slender, yet robust and strong enough to keep itself erect; this stalk has frequent joints, or knots, and, at each joint, there stand two extremely narrow, grassy leaves; those on the lower part of the stalk are about an inch in length, those on the upper part scarce half so much; all are of a pale green colour, and terminate in a point. The stalks are branched toward their upper part, and send out many smaller branches from their ramifications; these are short, and do not stand two opposite to one another, but alternately. The flowers stand in the axils of the leaves; they are small and white; the seed, which follows these, is small and black.

This plant is found in some parts of England and France, but it is not common; it is an annual, and flowers in July and August. Ray calls it, *Alfine polygonoides tenui folio, flosculis ad longitudinem caulis velutin spicam dispositis*. Magnol, *Polygonum angustissimum, gramineo, folio erectum*; and C. Bauhine, *Polygono angustissimo folio affinis*.

ANTHOXANTHUM.

THE calyx of the *Anthoxanthum* is a bivalve glume, containing a single flower: the valves are ovate, acuminate, and concave, and the inner one is larger than the other. The corolla is of the length of the larger valves of the cup, and is also a bivalve glume: each valve of this sends forth a small spine, from the lower part of its back. The nectarium is diphyllous, and very thin, of a cylindric figure, and formed of ovated leaves, surrounding one another. The stamina are two capillary filaments of great length; the antheræ are oblong, and bifurcated at each end: the germs of the pistil

pistil is oblong; the styles are two, and are capillary; the stigmata are simple. The glume of the corolla adheres afterwards to the seed, which is single, roundish, and pointed at each end.

This is the only grass, so far as is yet known, which has only two stamina. Of this genus there is only one known species.

ANTHOKANTHUM.

The root is composed of a number of white, and not very thick, fibres: the leaves are four or five inches long, about a third of an inch broad, and of a yellowish-green: the stalk is slender, jointed, and six or eight inches high; at every joint there stands a leaf, like the radical ones, and, at it's top, a short lax spike, about three quarters of an inch long, and less than half an inch broad, and of a brownish, or yellowish-green, colour. It is a very common grass in our meadows, and flowers early in spring. Ray calls it, *Gramen vernum, spica brevi laxa*.

Class the Second. Order the Third.

DIANDRIA TRIGYNIA.

Plants which have two antheræ, and three styles in each flower.

PIPER.

THE Piper has no calyx, or, at the most, only an unequal receptacle, of the nature of an amentum, or catkin: there is no corolla, nor any stamina. The antheræ are two in number, and are roundish, and are placed opposite, at the base of the germen: the germen of the pistil is large, and of an oval figure. There is no style: the stigma is triple, and hairy: the fruit is a round berry, having in it only one cell, in which is lodged a single globular seed.

Of this genus there is but one known species:

PIPER.

The Pepper Plant.

The root is composed of a number of black fibres: the stalks are numerous, green, somewhat woody, and jointed; they are not robust enough to stand erect, but lie upon the ground, unless supported, and, as they trail on the ground, they send out roots from the joints. The leaves stand singly at the joints, and are large, of a roundish figure, and have four or five high, longitudinal ribs on them: they are four inches long, three broad, and of a firm texture. The flowers are small, and stand in clusters, on the spikes; they are succeeded by the fruit, which is the common Pepper: twenty or thirty grains of this grow on each spike, and have no pedicles.

It is a native of Java, Sumatra, and Malabar; and is described in the *Hortus Malabaricus*, under the name of *Molago Coddii*.

There is a variety of this plant, the fruit of which is white: the plant, in all other respects, is the same. The common Black Pepper of our shops is the fruit of the first, and the genuine and native White Pepper of the second: this genuine White Pepper, however, rarely comes to us; what we have is made by art, from the Black, by taking off the rind.

Class the Third.

TRIANDRIA.

Plants which have in every flower three stamina.

THE Triandria have some of them only one, some two, some three styles in the flower; they are hence naturally arranged into three orders, of which the first comprehends, under the name of *Triandria Monogynia*, such as have three stamina and one style; the second, under that of *Triandria Digynia*, those which have

have three stamina and two styles; and the third, under that of Triandria Trigynia; such as have three stamina and three styles in each flower.

Order the First.

TRIANDRIA MONOGYNIA.

Plants which have three stamina and only one style in the flower.

Of these some have flowers neither spathaceous nor amentaceous; others have spathaceous flowers, and all that have so, have also trilocular capsules.

Class the Third. Order the First.

Division the First.

Triandria Monogynia, which have flowers neither spathaceous nor amentaceous.

VALERIANA.

THE calyx of the Valeriana is scarce distinguishable; it is a mere margin, or edge, crowning the germen: the corolla consists of a single petal; the tube is gibbous on one side, and contains a sweet juice: the limb is divided into five obtuse segments: the stamina are three, sometimes not so many; they are of a subulared figure, erect, and of the length of the corolla. The antheræ are round: the germen of the pistil is placed below the receptacle; the style is filiform, and of the length of the stamina: the stigma is thick. The fruit is a deciduous, coronated capsule, which does not open, while on the plant; the seeds are single, and of an oblong figure.

This genus comprehends the Valeriana of Tournefort and Vaillant, the Valerianella of the same authors, and the Valerianelloides of Vaillant.

The several species of it, however, differ very widely in the number and figure of the parts of fructification: the margin of the cup in some is so small, as scarce to be visible; in others it is larger, and divided into five segments. The tube of the corolla in some is very long, in others very short, in some it has a spur, full of a honey juice: the limb in some is equal, in others it is bilabiated, and the upper lip is bifid. In some the stamina are three, in others, as in the difform flowered ones, they are only two; in some others there is only one stamen, and in some the flowers are of distinct sexes. The stigma of the pistil is, in some, bifid, in others emarginated, in others globular: the fruit, in some, is a thick capsule, in others there is scarce any; in some the capsule is bilocular. The seed, in some species, is winged with down, in some covered with a capsule: it's figure, also, frequently varies from the general oblong one.

1. *Valeriana floribus triandris, foliis caulinis, pinnatis radicalibus indivisis.*

The Valerian with three stamina, and with whole and pinnated leaves.

Garden

Valerian.

The root of this species is oblong, of the thickness of a man's finger, and creeping. The plant rises to three feet in height: the stalk is round, smooth, and hollow; the leaves, which arise immediately from the root, are undivided, and of an oblong figure, and considerably broad; those which stand on the stalks are pinnated; they stand in pairs, at considerable distances, and have broad pedicles, which surround the stalk. The flowers stand on the top of the main stalk, and of several little branches, which arise from the axils of the upper leaves; they are disposed in clusters, in form of umbels; they are small and white, with a faint cast of red sometimes among it.

This species is a native of Alsace, and many other places in Europe; with us it is not wild, but is common in gardens. C. Bauhine calls it, *Valeriana hortensis*; Lobel, *Valeriana major*; and J. Bauhine, *Valeriana major odorata radice*.

2. *Valeriana*

2. *Valeriana floribus monandris caudatis, foliis lanceolatis integerrimis.*

Red Valerian.

The whole lanceolated-leaved Valerian, with caudated flowers, with single stamina.

The root of this species is oblong, and of the thickness of a man's finger, white and hard. The plant grows to a foot and half, or more, in height; the stalks are round, succulent, of a bluish green, and frequently jointed and hollow. The leaves stand in pairs at the joints; they are broad at the base, where they embrace the stalk, and thence go smaller to the extremity, of a flatish texture, and bluish-green colour, and usually even at the edges. The flowers stand in large clusters; they are of a fine scarlet colour, and each adheres to a long peduncle: the seed is winged with down.

This species is a native of Italy, Germany, and other parts of Europe; with us it is common in gardens, and often propagates itself by its seed on the walls. C. Bauhine calls it, *Valeriana rubra*. J. Bauhine, *Valeriana latifolia rubra*. Parkinson, *Valeriana rubra Dodonæi*.

3. *Valeriana floribus triandris, caule dichotomo, foliis linearibus.*

Corn Salad.

The linear-leaved and dichotomous Valerian, with three stamina.

The root of this species is small and oblong, and at the end is furnished with many fibres. The plant rises to six inches high; the stalks are angulated, slender, of a yellowish-green, and diffuse: the ramifications always going off two by two. The leaves stand in pairs on the stalks; they are about three quarters of an inch long, and a third of an inch, or more, in breadth; they are thin, and of a pale green. The flowers stand in little tufts or clusters; about the extremities of the stalks, they are whitish and small.

This species is very common with us in corn-fields, and is cultivated sometimes in gardens, as a salad, under the name of Lamb's Lettice. C. Bauhine calls it, *Valeriana campestris, inodora, major*. J. Bauhine, *Locusta herba prior*. Rivinus, *Locusta minor*; and Gerard, *Lactuca agnina*. The leaves of this plant are sometimes serrated, and from this variety is made a new species by authors, under the name of *Valerianella præcox foliis serratis*. Its other common varieties have also given rise to some other imaginary species.

The other more singular species of Valerian are, 1. The Pyrenean, calalia-leaved Valerian. 2. The creeping-rooted Alpine Valerian, with undivided leaves. 3. The scrophularia-leaved Valerian. 4. The roundish-leaved, mountain Valerian. 5. The tuberous-rooted Valerian. 6. The Celtic Valerian, or Celtic Nard. 7. The narrow-leaved, red Valerian. 8. The great water Valerian. 9. The wild Valerian, with hairy leaves. 10. The small water Valerian. 11. The calcitropa-leaved Valerian. 12. The broad-leaved, annual Valerian.

The Valerians are, most of them, good cephalics; the ninth species is one of the best nervous simples the whole materia medica furnishes us with. The root is given, in powder, in convulsions, head-ache, and all nervous complaints, with success.

CNEORUM.

THE calyx of the Cneorum is a small permanent perianthium, composed of one leaf, and divided into five short segments at the edges. The corolla consists of three oblong petals, of a linear, but somewhat lanceolated, shape: they are concave, erect, and deciduous. The stamina are three subulated filaments, shorter than the corolla; the anthers are small. The germen of the pistil is obtuse and trilobous: the style is erect, firm, and of the length of the stamina; the stigma is trifid and patent. The fruit is a dry berry, of a globose, but somewhat trilobous, figure, and contains three cells, in each of which is a single round seed. This genus takes in the chamelæza of Tournefort. There is but one known species of it.

CNEORUM.

CNEORUM.

The root of this little shrub is hard and woody, oblong, divided into several branches, and furnished with a multitude of fibres. The trunk is woody, half an inch in diameter, and covered with a smooth brown bark. It divides into many branches, and those send out others smaller and shorter, and on these stand the leaves, which are oblong and broad, obtuse at the points, and of a deep green colour: the flowers are small and yellow.

This plant is a native of Spain, Italy, and some parts of France. It grows in many parts of Germany, also in dry, exposed places. We have it in our green-houses. *C. Baubine* and others call it, *Chamaëza tricochos*. *Dodonæus*, simply, *Chamaëza*. All the parts of this shrub are violently emetic and cathartic, when taken internally. In France they are given in dropfies, but such violent medicines are better neglected.

HIRTELLA.

THE calyx of the *Hirtella* is a perianthium, consisting of a single leaf, divided into five segments of a somewhat oval form, reflex, equal in size, and permanent. The corolla consists of five regular petals; they are roundish and hollow; it is smaller than the cup, and deciduous. The stamina are three, setaceous, very long, and somewhat flattened filaments; they are permanent, and, toward the ripening of the seed, are twisted spirally: the antheræ are orbicular. The germen of the pistil is roundish, compressed, declinatory, and hairy: the style is filiform, and is nearly of the length of the stamina, and takes its origin from the depressed side of the germen; the stigma is simple. The fruit is a berry of a kind of oval figure, broadest at the top, a little compressed, and obscurely trigonal. The germen and the style adhere to its base: the seed is single, and of the figure of the fruit.

Of this genus there is but one known species, which is sufficiently distinguishable by these characters.

OLAX.

THE calyx is a small, permanent perianthium, composed of a single leaf, and undivided at the edge: the corolla consists of a single petal, and is of the infundibuliform kind, and divided into three segments at the edge. The stamina are three; the style single; and the nectarium is composed of four leaves. There is only one known species of it, which is sufficiently distinguishable by these characters, nor needs any farther description.

TAMARINDUS.

THE calyx of the *Tamarindus* is a plane perianthium, composed of four leaves, equal in size, and of an oval figure. The corolla consists of three petals of an oval figure, equal, flat, plicated, patent, smaller than the leaves of the cup, and inserted into them: the lower segment being left without one. The stamina are three filaments placed together in the empty sinus of the cup; they are of a subulated figure, and bent towards the corolla. The antheræ are simple: the germen of the pistil is oval; the style is subulated, and bent towards the stamina: the stigma is simple: the fruit is an oblong legume compressed, formed of a double bark, with a pulpy matter between; it contains only one cell, in which there are three angulated compressed seeds.

There is only one known species of this genus, which is the tree that produces the officinal *Tamarinds*.

*Tamarindus.**The Tamarind-tree.*

The root of the *Tamarind-tree* is large and brachiated, the arms spreading every way, and penetrating deep. The tree rises to the height of our walnut-trees, and is

A s s

very

very ramose and diffuse, the branches spreading all about. The trunk is often so thick, that two men can scarce fathom it. It's bark is of a greyish brown, very thick; it's wood firm and reddish. It's branches extend every way, in a tolerably regular order, and diffuse themselves a great way. The leaves are long and pinnated; composed of eight, ten, or twelve rows of pinnae, with no odd leaf at the end, tho' most of the figures of the tree give one. The pinnae are three quarters of an inch long, and a quarter of an inch, or more, broad; they are of a pale green, obtusely pointed, largest at the base, and, as it were, aurited; of an acid taste, and of a pale, but bright green, colour, smooth on the upper side, and a little hairy underneath. The flowers grow from the axils of the leaves; they stand in clusters, and are of a pale rose colour, variegated with lines of a deeper red, or blood colour. The fruit is like a bean-pod in shape and size, and has three or four protuberances in it: it's outer bark is rigid, thick, and brown; it's inner one green and tender. The space between these contains a thick, blackish, pulpy matter, of an acid taste, which is the matter we use in medicine, and is intermixed with a quantity of woody fibres.

The Tamarind-tree is a native of Egypt, Arabia, and of both the East and West Indies. The pulp contained between the two skins of the pod is an agreeable acid; it is good to quench thirst in fevers, and is a gentle cathartic; it is an ingredient in the knitive electuary, and other compositions.

MELOTHRIA.

THE calyx of the Melothria is a deciduous, campanulate, ventricose perianthium, consisting of a single leaf, divided into five short segments, and affixed upon the germen. The corolla is composed of a single petal, and is of the rotated kind; the tube is of the length of the cup, and every-where grows to it. The limb is plane, and is divided into five very obtuse segments, broadest toward the edge. The stamina are three conic filaments; they are affixed to the tube of the corolla, and are of the same length with it: the antheræ are didymous, roundish, and compressed. The germen of the pistil is of an ovato-oblong and acuminate figure, and is placed under the receptacle of the flower. The style is cylindric, and of the length of the stamina; and the stigmata are three in number, thickish and oblong. The fruit is an oval, oblong body, divided within into three parts, and containing a number of oblong, compressed seeds.

Of this genus there is only one species, and that differs from the *Monœcia Syngenesia*, by it's hermaphrodite sex.

MELOTHRIA.

The root of the Melothria is composed of a number of thick fibres. It's stalk is very weak and slender, but it extends itself to a very great length, six feet, or more, being common to it. It either creeps upon other things by means of it's tendrils, or else it crawls on the ground. The leaves stand irregularly on the stalks, one at a joint; their pedicles are about an inch long; the leaves themselves of an obtusely triangular figure, such as approaches to roundness; a little articulated at the base, and, from one auricle to the other, about an inch and half in diameter. The length is about equal to the breadth in this part, measuring from the insertion of the pedicle to the point: they are rough to the touch, somewhat hairy, and a little crenated about the edges, and of a dusky green colour. From the axils of the leaves arise the tendrils; they are green, very thin, and form themselves into a kind of spiral screws: the flowers also arise from the axils; these are large, and yellow, and affixed on pedicles of an inch long. The fruit is of an oval shape, and of the size of a large gooseberry; smooth on the surface, and black, when ripe. The seeds are flat, and the pulp they are inclosed in is of an insipid taste.

This plant is common in Canada, Virginia, and Jamaica. It grows on ditch-banks, and in uncultivated places; the fruit is pickled for the table in those places. It is kept in some of our gardens. Tournefort calls it, *Bryonia Canadensis folio angulato, fructu nigro*. Plukenet, *Cucumis parva*, repens, Virginiana, fructu minimo; and Sir Hans Sloane, *Cocumis minima fructu ovali, nigro, levi*.

POLYCNE-

POLYCNEMUM.

THE calyx of the Polycnemum is a permanent, acute, subulated perianthium, composed of three leaves: the corolla is composed of five petals, very like the cup, but shorter. The stamina are three capillary filaments, shorter than the flower; the antheræ are obtuse. The germen of the pistil is roundish; the style is bifid, and of the length of the stamina, and the stigmata are obtuse. The seed which follows every flower is single; it remains in the cup, and has scarce any covering, at most, only a very thin membrane.

This genus comprehends the camphorata of Tournefort and Dillenius.

There is but one known species of it.

POLYCNEMUM.

The root is large and tuberous: the stalks are numerous, hard, woody, and a foot and half high; whitish, hairy, considerably thick, and ramose. They are jointed at small distances, and the knots are thick and protuberant. The leaves stand very thick at these joints; they are short, narrow, hairy, and rigid: a third of an inch is about their usual length. The flower is small and greenish, the apices red; the seed oblong and black.

It is a native of France. C. Bauhine calls it, Camphorata hirsuta. J. Bauhine, Camphorata Monspeliensium. Lobel, Camphorata Monspeliensium, and Chamæpeuce Plinii.

Class the Third. Order the First.

Division the Second.

Triandria Monogynia, which have spatheaceous flowers, and trilobular capsules.

CROCUS.

THE calyx of the Crocus is a monophyllous spathe. The corolla is a simple tube, consisting of one petal. Its extremity is divided into six erect, equal segments, of an oblong, oval shape: the stamina are three subulated filaments, shorter than the flower; the antheræ are of a sagittated figure. The germen of the pistil is roundish; the style is filiform, and of the length of the stamina. The stigmata are three in number; they are convoluted and ferrated. The fruit is a roundish, but trilobous, capsule, formed of three valves, and containing three cells in each, of which there are several round seeds.

1. *Crocus floribus fructui impositis tubo longissimo.*

The long-tubed Crocus, with the flowers placed on the fruit.

Saffron.

The root of the saffron plant is roundish, and of the size of a nutmeg, or larger; it is white, and double or composed of two bulbs, one laid upon the other: the under one is always the larger; both are covered with some dry skins, and there are a number of fibres at the base. The leaves arise five, six, or eight from the root; they are eight inches long, as narrow as grass leaves, and of a very deep-green colour. The stalk which supports the flower is short and single, one flower only grows on it's head: this is very large; the lower part of it is white, the upper part of a bluish purple, but in the colour there is almost infinite variety. The apices are yellow, and the stigmata are of a reddish-yellow colour, crisated and fleshy; these make what we call saffron in the shops. The leaves have a very singular character, in that a membranaceous hollowed line runs all along them.

The saffron plant is a native of some parts of Portugal, and is found wild in some other places. With us it is kept in gardens, and cultivated in fields to a great advantage;

tage; the English being the finest saffron in the world; and selling every-where at a great price. It is cultivated in Cambridgeshire, and some other places, and might be in many more to very great advantage. The usual way of propagating it is by the bulbs, a great quantity of which are produced annually: these bulbs are laid in the ground in spring, at six inches distance, or less; and in the first year they produce only leaves; but in the October, of the year following, they flower, and the saffron is collected from them. The flowers last but a day or two; after they are gone, there grow up leaves which endure the whole winter, but in spring fade, and are not seen during the whole summer. The time of gathering the saffron is morning and evening; the flowers are always gathered, as soon as well open, and a new succession of them rises daily for a month, or more. The bulbs are often taken up, after they have flowered, and kept in a dry place, in the open air, till spring, when they are put into the ground again.

The saffron produced from this flower is as powerful a simple as almost any the vegetable world affords us: it is a noble cordial, and sudorific, and is good in nervous and hysterical cases. It is an ingredient in many of the compositions of the shops, and is frequent in extemporaneous prescription.

The colour of the flower of this plant varies almost without end, whence there are a multitude of varieties beautiful enough, and honoured with the names of distinct species by authors; but these distinctions are the business of the florist, not of the botanist. Tournefort has given specific names to near a hundred and fifty tulips, while in reality there is but one; and to almost twice as many hyacinths, while in reality there are but two species of that genus.

I X I A.

THE calyx of the *Ixia* is a compound spathe, containing several flowers. The exterior squammæ are larger and thicker, the interior ones thinner; the former are of an ovato-lanceolate figure, and lacerated at the edges; the latter, or interior, are also lacerated at the edges, and are permanent, and separate the germia. The corolla consists of six equal petals of an oblong, lanceolated figure; the stamina are three subulated filaments, of not half the length of the flower; the antheræ are simple. The germen of the pistil is oval and triquetrous; it is placed under the receptacle of the flower. The style is simple, erect, and of the length of the stamina; the stigma is trifid and thick. The fruit is a capsule of a triquetrous, suboval figure, composed of three valves, and containing three compressed cells, in each of which is a single roundish seed.

Ixia foliis ensiformibus, floribus remotis.

The Ixia, with sword-like leaves, and remote flowers.

The root of this species is tuberous, an inch, or more, in diameter, branched out into many ramifications, and creeping under the surface of the ground. The leaves are ten or twelve inches long; they rise in clusters, and are an inch, or more, in breadth; broadest toward the base, and tapering all the way to a point: they are of a tough, flexile structure, and pale bluish-green colour; the flowers are yellow, spotted with orange colour.

G L A D I O L U S.

THE calyx of the *Gladiolus* is in a manner wanting; there are only two or three vague spathe. The corolla consists of six petals, which unite just at their base; they are all of an oblong figure, and obtuse: the three upper ones bend toward one another, the three lower are reflex: the short tube, which they form, when they unite at the base, is crooked. The stamina are three subulated filaments, inserted into the alternate petals of the corolla; they are all covered by the connivent petals; the antheræ are oblong. The germen of the pistil is placed below the receptacle; the style is simple, and of the length of the stamina; the stigma is trifid and concave. The fruit is an oblong, bellied capsule, obscurely trigonal, obtuse, formed of three valves,



valves, and containing three cells. The seeds are numerous, roundish, and covered with a calyptra.

This genus comprehends the *Gladiolus* of Tournefort, Malpighi, and Rivinus.

1. *Gladiolus foliis ensiformibus bulbo duplici.*

The sword-leaved Gladiolus, with a double bulb.

The root of this plant consists of two bulbs, laid one over another; they are solid and fleshy, and are covered with several reticular coats, and furnished with fibres at the bottom. The leaves grow in the manner of those of the iris; they are long, and very narrow; striated, of a bluish-green colour, and terminate in a point. From among these leaves rises the stalk; it is round, slender, succulent, green, and two feet high. The flowers stand in a long series toward the top of this stalk, six or eight in number: they are large, and of a beautiful rose colour, but with more brightness than the rose. They stand at an inch, or more, distance from one another, and all hang on one side of the stalk: the whole plant has a sweetish, and somewhat acrid, taste.

It is a native of Spain, Italy, and some parts of France. C. Bauhine calls it, *Gladiolus floribus uno versu dispositis*. J. Bauhine, *Gladiolus* five *Xiphion*. Parkinson, *Gladiolus Narbonensis*.

2. *Gladiolus foliis latius bulbo simplici.*

The broad-leaved Gladiolus, with a single bulb.

The root of this species is a single bulb, large, compressed, solid, covered with a few membranes, and furnished with several fibres. It's fleshy part is of a deep red; it's taste very acrid and burning. The leaves are oblong and broad, a foot and half in length, and two inches in breadth; they are of a bluish-green colour, and firm texture. The stalk grows from among them, and is usually simple, sometimes ramose; it is rounded, green, and very brittle: the flowers are large, and stand in double rows; they are of a deep purple on the outside, and of a deep yellow, with some purple lines, within. The whole stalk is of a deep blackish purple, and the flowers stand on short purple peduncles, covered each by two blackish-red leaves.

This is a native of the Cape of Good Hope; it is met with, however, in some of our stoves. C. Bauhine calls it, *Gladiolus maximus Indicus*; and Cornutus, *Gladiolus Æthiopicus flore coccineo*.

The other species of the *Gladiolus* are, 1. The great, Turkish, purple *Gladiolus*. 2. The dwarf broad-leaved *Gladiolus*. 3. The dwarf grassy-leaved *Gladiolus*. These seem to be really distinct species: but, beside these, Tournefort and others give names to several varieties of one or other of these, under the opinion of their being distinct species. The flowers are sometimes white, sometimes of a deeper, and sometimes of a paler, red; and this, and their different disposition, has given origin to these imaginary species.

ANTHOLYZA.

THE *Antholyza* has no calyx; there are only some vague, alternate, imbricated, and permanent spathæ, which separate the flowers. The corolla consists of a single petal: the base of it is a tube, which by degrees expands into a large, compressed, and ringent mouth. The upper lip is strait, very long, slender and undulated, and at it's base has two short laciniae: the lower lip is shorter, divided into three segments, and the lower or middle one of these is propendent. The stamina are three long slender filaments; two of them are lodged under the upper lip, one upon the lower: the antheræ are acute. The germen of the pistil stands under the receptacle: the style is filiform, and has the same length and situation with the two upper filaments: the stigma is trisid, capillary, and reflex. The fruit is a roundish, but obscurely trigonal, capsule, formed of three valves, and containing three cells; in each of which are several angular seeds.

Of this genus we know only one species, which has been used to be ranked among the *Gladioli*.

ANTHOLYZA.

The root of this plant is composed of two fleshy bulbs, one lying over the other, and both surrounded with two or three reticular membranes. The leaves are eight or ten inches long, and not more than two thirds of an inch in breadth; they are of a bluish or greyish-green colour, and are broadest at the base, and terminate in a point. The stalk rises from among these; it is ten, twelve, or more, inches in height, round, of a pale green, of the thickness of a large packthread, and hairy. The flowers stand in a long series at the top, six or eight one over another, at some distance. They are large, and of an extremely beautiful crimson colour.

This is a native of Æthiopia, but we have it in some of our stoves. Commelin calls it, *Gladiolo Æthiopico similis planta, angustifolia, caule hirsuto, flore rubicundissimo*; and Breynius, *Gladiolus floribus rectum referentibus, coccineis, laprema lacinia erecta fistulosa*.

I R I S.

THE Iris has no calyx; there are only some alternate, simple, imbricated, permanent spathe, which separate the flowers. The corolla is divided into six parts: the petals are oblong and obtuse: the three exterior ones are reflex, the interior are erect, and more acute; they all adhere by their ungues or bases. The stamina are three subulated filaments, lying on the reflex petals: the anthers are oblong, strait, and depressed; the germen of the pistil is oblong, and placed beneath the receptacle; the style is simple, and very short; the stigma is very large, and divided into three segments, which resemble petals; they are broad and reflex: their apices are bifid. The fruit is an oblong angular capsule, composed of three valves, and formed into three cells, in each of which is contained a number of large seeds.

The nectarium, in some species of the Iris, is a longitudinal, hairy line on the base of the reflex petals; in others it is formed of three melliferous spots on the external part of the flower, near the base. The capsule in some is trigonal, in others it is hexagonal.

This genus comprehends the *Iris*, the *Xiphion*, the *Sisyrinchium*, and the *Hermodystylus* of Tournefort. The parts of fructification in all these are the same, the root and leaves only differ. In the *Xiphion*, the root is bulbous, and the leaves are subulated. In the *Sisyrinchium*, the root is composed of two bulbs laid one on the other. In the *Hermodystylus*, the root is tuberous, and the leaves tetragonal; and, in the *Iris*, the root is fleshy, oblong, and creeping, and the leaves are ensiform.

1. *Iris corollis barbatis, caule foliis longiore multiflora.*
The bearded-flowered Iris, with many flowers on a stalk longer than the leaves.

Common
Flower de
Lucc.

The root of the common *Iris* is large, fleshy, tuberous, and creeping; it is of an inch in diameter, and it creeps just under, or upon, the surface of the earth, with numerous ramifications joining in an irregular manner one to another. It is brown on the outside, white within; very juicy, and of a very acrid and pungent taste. The leaves arise in tufts, eight or ten together; they are near two feet long, about an inch broad, and of a pale green colour: they are broadest at the base, and terminate in a point. The whole cluster of leaves unite at the base, receiving one another into their cavities. From the center of these leaves rises a stalk of near three feet in height, round, succulent, and green, but covered with a whitish dust, that easily rubs off: there are five or six joints in this stalk, at each of which stands a single, short leaf, and often it divides at top into two or three branches, on each of which there are two or three of those short leaves, which are affixed by no pedicle, but surround the stalk at the base. The flowers stand on the tops of these stalks; they are of a deep violet purple, and very large.

This is a native of some parts of Germany; it is common with us in gardens. C. Bauhine calls it, *Iris vulgaris Germanica sive sylvestris*. J. Bauhine, *Iris vulgaris violacea*.

2. *Iris*

2. *Iris radice duplici bulbosa, foliis angustis mollibus.**The double bulbous Iris, with soft, narrow leaves.*

This is one of the species of *Iris*, commonly called *Sisyrinchia*. The root is composed of two moderately large bulbs, one lying upon the other; at the time when the plant is in flower, the upper one is larger, and more succulent, and the under one flaccid: the taste is sweetish and pleasant, and the root effulent. The leaves are long, and very narrow; they grow several together from the same root, and usually lie upon the ground: they are striated, soft to the touch, tender as the leaves of garlic, and of a deep green colour. The stalk is round, smooth, and firm, about six or eight inches high: the flowers are large, and of a fine deep blue, with three spots of yellow; four or five of them grow on every stalk, but only one opens generally at a time.

This species is a native of Spain; we have it frequently in our gardens, where it stands very well in the open beds. C. Bauhine calls it, *Sisyrinchium majus flore late macula notato*. Clusius, *Sisyrinchium majus*; and J. Bauhine, *Iridi bulbosæ affinis sisyrinchium majus*.

3. *Iris tuberosa radice, foliis tetragonis.**The tuberous-rooted and tetragonal-leaved Iris.*

This is the species of *Iris*, which Tournefort has formed a separate genus of, under the name of *Hermodystylus*. Its root is tuberous, and composed of several oblong and thick pieces, only joined together, sometimes all united to a kind of head, and resembling four or five fingers; from this there rise three or four leaves, near two feet in length, and very slender; hard, rigid, and of a quadrangular shape, terminating in a sharp point, and, when full grown, often drooping their tops to the ground. They are of a bluish-green colour, and at the base they are smaller than elsewhere, and surrounded with three or four membranes. The stalk rises in the midst of these; it is slender, rounded, and striated; two leaves firmly surround it from the base almost to the top, receiving it into their sinus's: toward the top there are two knots in it, placed near one another; these have each rising from it a membranaceous, hollowed leaf; the lower of these is the larger. The flower is moderately large: the three reflex petals are of a fine, deep, glossy black; the others are greenish, or whitish, with a tinge of black.

This species is a native of Egypt and Arabia, we have it in some of our gardens, but it is not common. C. Bauhine calls it, *Iris tuberosa*; and J. Bauhine, *Iris tuberosa Belgarum*.

4. *Iris foliis marginè connatis corollis imberbibus.**The hollow-leaved Iris, with the edges almost meeting.***Blue bulbous Iris.**

This is one of those *Iris's* called, by Tournefort and others, *Xiphion*. The root of this species is large and roundish, fleshy, and covered with several black membranes: the leaves are large, broad, and carinated, or hollowed; the middle of the hollow is usually covered with a kind of silver-like drops. The edges almost meet with one another, so as to give it the appearance of a round, hollow leaf, like that of a leek. The stalk is sufficiently thick, but infirm and tender, and is usually surrounded with four or five leaves: it grows to ten or twelve inches high, and sometimes has only one, sometimes two, flowers, rarely more on it. These are large, and very beautiful, of a deep violet purple; sometimes indeed paler, and sometimes white, under which variation the plant has been described as a distinct species, and even when pale red, or striated, as others.

This is a native of Spain, but it succeeds very well in our gardens. C. Bauhine calls it, *Iris bulbosa cæruleo-violacea*. J. Bauhine, *Iris bulbosa tota violacea vel cærulea*; and Tournefort, *Xiphium cæruleo-violaceum*.

These four species may give a distinct idea of the principal distinctions of the genus, as they are selected from among those distinguished by authors, who have paid more regard to the roots and leaves of plants, than to their parts of fructification, into different genera. The other species of the *Iris* are very numerous, and their varieties described

described under the name of distinct species: more so, of those called by authors *Iris*: the principal are, 1. The great, black and white-flowered *Iris*. 2. The blue, Asiatic, many-flowered *Iris*. 3. The great, broad-leaved, blue, Roman *Iris*. 4. The yellowish German *Iris*. 5. The elder-smelling *Iris*. 6. The broad-leaved *Iris*, with no leaves on the stalks. 7. The dwarf purple *Iris*. 8. The dwarf yellow *Iris*, variegated with purple. 9. The great-flowered, white, Florentine *Iris*. 10. The common, yellow, water *Iris*, or flag-flower. 11. The stinking *Iris*, or gladwin. 12. The great maritime *Iris*. 13. The narrow-leaved *Iris*. 14. The greenish-yellow-flowered, Pyrenean *Iris*. 15. The dwarf red-flowered *Iris*. 16. The dwarf variegated *Iris*. 17. The dwarf *Iris*, with pale yellow flowers. 18. The broad-leaved *Iris*, without a stalk.

Of those called *Sisyrinchia* are, 1. The great *Sisyrinchium*, with flowers spotted with white. 2. The little *Sisyrinchium*.

Of the *Hemodactylus*, there is no species but that described above; and, finally, of those called *Xiphia*, the principal are, 1. The blue *Iris*, without a stalk. 2. The early, variegated, Persian *Iris*. 3. The blue, taller *Iris*. This, as well as the first species, varies into white, and pale red, and variegated flowers. 4. The broad-leaved, tall *Xiphion*. 5. The large-leaved and large-flowered *Xiphion*. 6. The narrow-leaved *Xiphion*. 7. The great, yellow-flowered *Xiphion*. 8. The little, blue *Xiphion*. 9. The yellow and black *Xiphion*.

The root of the common blue *Iris*, fresh, is a very violent cathartic, but, where the constitution can bear such a medicine, will do great service in dropsies. The Florentine Orrice or *Iris* root is the dried root of the same species, growing in a warmer climate. It is peeled, and carefully prepared in the drying; it is esteemed a very good pectoral and attenuant, and is not only common in extemporaneous prescription, but is an ingredient in many of the shop compositions.

COMMELINA.

THE calyx of the *Commelina* is a very large, permanent *spatha*, compressed, connivent, and cordate. The flower consists of six petals: the three exterior ones are small, of an oval figure, concave, and resemble a perianthium; the three interior ones are placed alternately with these, and are large, roundish, and coloured. The nectaria are three in number, and they resemble so many anthers; they stand on filaments, and are cruciform and horizontal. The stamens are three subulated filaments, reclinate, and agreeing in shape with the filaments of the nectaria, but placed below them; the anthers are of an oval figure. The germen of the pistil is roundish: the style is subulated, revolute, and of the length of the stamens: the stigma is simple. The fruit is a naked, globose, but trifoliate capsule, formed of three valves, and containing three cells, in each of which there are two angular seeds.

This genus comprehends the *Commelina* of Plumier and Dillenius, and the *Zanonia* of Plumier. The number of the parts is variable; if the petals are only four, small, and equal, a third of the number of the other parts is to be excluded, and unity added to the nectarium, and all is right: in the *Zanonia*, the three exterior petals stand on the germen, and remain in figure of a perianthium; the three interior ones are equal.

1. *Commelina erecta corolla ampliore.* *The erect Commelina, with a large flower.*

The root is perennial, not creeping, but composed of a number of thick fibres, whitish and hairy. The radical leaves are six inches long, and two and a half broad, narrow at the base, and pointed at the ends. The stalk is round, striated, and grows to two feet high: it is robust and erect. The leaves stand singly; they surround the stalk at the base, and are three inches long, and an inch broad, ribbed longitudinally, pointed at the extremity, and of a deep green. The flowers stand at the tops of the stalks and branches, and arise from among clusters of lesser leaves; they are of a pale blue, and of the breadth of a shilling: the anthers are yellow. It is a native of Virginia. Dillenius calls it, *Commelina erecta ampliore subcaerulea flore*.

The other species are, 1. The annual, soapwort-leaved, procumbent *Commelina*. 2. The red-jointed, orpine-rooted *Commelina*. 3. The narrower-leaved *Commelina*. 4. The deep-flowered *Commelina*.

XYRIS.

X Y R I S.

THE calyx of the Xyris is a spike of a roundish shape, composed of squammæ of a round concave figure, imbricated, and serving to separate the flowers. The glume is small and bivalve; the valves are navicular, compressed, arcuated, acute, and connivent. The corolla consists of three petals, which are plane, patent, large, and crenated, and have narrow unguis of the length of the calyx. The stamens are three slender filaments, shorter than the corolla: the anthers are erect and oblong. The germen of the pistil is roundish, the style is filiform, and the stigma is triple. The fruit is a capsule contained within the cup; the figure round, and composed of three valves, and containing three cells; in each of which are a number of minute seeds.

Of this genus there is only one known species.

X Y R I S.

The root is composed of a few white fibres: the leaves are five or six inches long, and half an inch broad at the bottom; from thence they grow narrower to the extremity, where they terminate in a point. They are ribbed longitudinally, of a whitish colour at the bottom, and of a beautiful green all the way up beside. The stalks are angular, and about a foot high; they are also whitish at the bottom, and green upwards: they are naked, and have no branches; at the top of each stands a head, of the bigness of a nutmeg, or more. These are formed of squammose leaves, and from the ale of these grow the flowers, which are of the breadth of a sixpence, and of a bright, shining yellow.

It is a native of Malabar, and grows in watery places. It is described in the Hortus Mal. V. 9. p. 139, under the name of Kortsjiletti-pulla.

Class the Third. Order the First.

Division the Third.

Triandria Monogynia, the flowers of which have an imbricated amentum, and naked seeds.

S C H Æ N U S.

THE calyx of the Schænus is a common glume, containing several flowers; it is permanent, large, erect, and attenuated, and is composed of two valves. The proper corolla consists of six petals, which are permanent, of a lanceolated figure, acute, and connivent; unequal in size and situation, disposed in a kind of imbricated manner, and the exterior ones shorter than the rest. The stamens are three capillary filaments; the anthers are oblong and erect. The germen of the pistil is of a triquetrous, oval form, and obtuse; the style is setaceous, and of the length of the corolla; the stigma is trind and slender. There is no pericarpium; the seed is single, glossy, of an oval, but somewhat triquetrous, form, and largest in the upper part, and is contained, till ripe, in the corolla. This genus comprehends the Cyperella and Pseudo-Cyperus of Micheli.

There is a species of this genus, in which certain short setæ form the proper receptacle round the seed.

1. *Schænus culmo subtriquetro foliis, floribus fasciculatis, foliis setaceis.*
The fasciculated-flowered, triquetrous-stalked Schænus, with setaceous leaves.

The root of this species consists of a few black fibres, formed at the top into a kind of head; from this rise a great number of oblong, and very narrow, leaves; from among these grows a stalk a foot, or fourteen inches, high, obscurely three-cornered in shape, and considerably hard, rigid, and firm. This has two or three joints, and from

C e c

each

each of these there grows a leaf like those which rise immediately from the root, only smaller; from the axis of these leaves rise stalks of two or three inches long, and very slender; on the top of each of these stands a cluster of flowers, in form of a little umbel; and on the top of the main stalk stand two or three such clusters or umbels. The flowers are very singular in their appearance; being of a fine bright white, they give this a different look from all the other grasses.

This elegant grass is a native of England, and most other parts of Europe; it grows in boggy grounds. Scheukzer calls it, *Grassum cyperoides palustre leucanthemum*. Vaillant, *Juncus palustris floribus albis*.

2. *Sclænus culmo tereti, foliis margine et dorso aculeatis.*

The round-stalked Sclænus, with leaves prickly at the back and edges.

The root of this species is long, of the thickness of a goose-quill, and creeps a great way under the surface of the earth. The stalk is round, geniculated, and four, five, or six feet high; the leaves are very long; those on the stalks are a foot long, and half an inch wide, carinated, and terminate in a point; the back and edges are serrated and prickly. The tops of the stalks are ornamented with large panicles of flowers, like those of millet. The seeds are small and black.

This species is a native of England, but it is not common; it grows in boggy places. Haller calls it, *Marricus*. C. Bauhine, *Cyperus longus, inodorus, Germanicus*.

3. *Sclænus culmo tereti nudo, capitulo ovato, involucri diphylli valvula altera subulata longa.*

The round-stalked Sclænus, with an oval head, and one of the valves of the flower long and subulated.

The root of this species is composed of a number of blackish fibres, collected into a kind of tuft. The leaves are four inches long, and triangular; they grow in great tufts. Among these rise the stalks; they are eighteen inches, or more, in height, and each supports a single head, of an oval figure, and brown colour. The seeds are whitish; the lower part of the stalks and leaves are usually purplish.

This species is not unfrequent in boggy grounds with us. Linnæus calls it, in his *H. Cliff.* *Sclænus scæculus spicatus*. Morison, *Juncus levis panicula glomerata nigricante*; and Haller, *Carex spica multipartita calycibus spicularum bifoliis*. Scheuekzer, *Juncus affinis capitulo glomerato nigricante*.

CYPERUS.

THE calyx of the *Cyperus* is an imbricated spike, formed of oval, carinated, plano-inflex squaræ, separating the flowers: there is no corolla. The stamens are three very short filaments. The anthers are oblong and fuscated. The germen is very small; the style is filiform and very long; the stigmata are three in number, and capillary. There is no pericarpium. The seed is single, of a triquetrous form, acuminate, and has no hairs or villi.

This genus comprehends the *Cyperus* of Micheli and Tournefort, and the *Melanosclænus* of Micheli, and is very nearly allied to the *Scirpus* and *Eriophorus* kind.

1. *Cyperus culmo triquetro folioso, panicula foliosa supra decomposita, pedunculis nudis, spiciis alternis.*

The three-square stalked Cyperus, with a ramose panicle, and alternate spikes.

LONG CYPERUS.

The root of this species consists of a number of oblong, geniculated branches, spreading various ways, and entangling irregularly with one another; these are succulent, tender, and of a blackish colour, and to these are affixed a number of fibres, some of which sustain tuberos bodies of an oval shape, and of the size of a walnut. From the upper part of the oblong branches of the root, arise leaves of an oblong, narrow, and carinated figure. The stalk rises in the midst of these, and is smooth, and

and of a trigonal figure, striated on the surface, and filled with a white pith within. On the top of this stalk stand a number of lesser leaves, arranged into the form of a radiated star; and from the center of these rises the panicle, which is very diffuse, and branched, and consists of alternate spikes affixed to naked pedicles.

This species is frequent in England, and many other parts of Europe. It grows in wet places. C. Bauhine calls it, *Cyperus odoratus radice longa*. J. Bauhine, *Cyperus panicula sparsa speciosa*.

2. *Cyperus culmo triquetro nudo, panicula foliosa supra decomposita, spicis confertis distichis compressis.*

The triquetrous, naked-stalked Cyperus, with a foliose, ramose panicle, and compressed, distichous spikes.

This is a very elegant species of *Cyperus*, though not a large one. It's root is composed of a number of slender, oblong branches, creeping under the surface of the ground. The leaves are six inches long, slender, and carinated; the stalk rises to five or six inches high, and is terminated by a very ramose panicle, which is of a yellowish colour, and is formed of a number of short, compressed spikes.

This is frequent in boggy places in Ireland, and elsewhere. C. Bauhine calls it, *Gramen Cyperoides minus panicula sparsa subflavescente*. J. Bauhine, *Gramen parvum pulchrum panicula lata compressa*. The panicle of this is sometimes blackish, in which state it has been described by authors, under the name of a different species.

3. *Cyperus culmo triquetro folioso, panicula decomposita minore, spicis distichis.*

The triquetrous, foliose-stalked Cyperus, with a smaller, decomposed panicle.

Round Cyperus.

The root of this species consists of a number of tuberous bodies, of an oval figure, and of the bigness of a large olive, of a brownish colour, succulent, and striated on the surface, which are hung to oblong fibres one above another, in the manner of the roots of the filipendula. The leaves are large, two feet long, three quarters of an inch broad, and deeply carinated: they are of a dusky green colour, and very rigid. The stalks arise to two or three feet high, and have on their summits a radiated set of short leaves, from among which rises the panicle: this is less compound than those of the others before described; the peduncles are short and slender, and the spikes distichous, and of a dusky brown colour.

This is a native of Arabia and Egypt; it is no where so plentiful as about the borders of the Nile. C. Bauhine calls it, *Cyperus rotundus orientalis major*; and Prosper Alpinus, *Cyperus Hadneg Egyptia*.

The other more singular species of *Cyperus* are, 1. The round-rooted, narrow-leaved, esculent *Cyperus*. 2. The grassy *Cyperus*. 3. The golden, panicled, American *Cyperus*. 4. The dwarf *Cyperus*, with panicles very closely pressed together. 5. The thin, panicled *Cyperus*. 6. The *Cyperus*, with a diffuse panicle, and narrow, short locustæ. 7. The broad-leaved, great *Cyperus*.

The roots of the Cyperi are all carminative and attenuant. Those of the first and third species are used in medicine, under the names of *Cyperus longus*, and *Cyperus rotundus*. They promote the menses, and are good in all chronic cases arising from obstructions of the viscera.

SCIRPUS.

THE calyx of the *Scirpus* is an imbricated spike, consisting of oval squammæ, of a plano-inflex figure, separating the flowers: there is no corolla. The stamina are three oblong filaments; the antheræ are oblong. The germen of the pistil is very small: the style is filiform and long; the stigmata are three, and capillary: there is no fruit. The seed, after every flower, is single, and of a triquetrous figure, acuminate, and has villi, or hairs, on it, longer than the cup; these villi are it's great distinction from the *Cyperus*: they are in some species affixed to the base of the seed, in others to it's apex.

This

This genus comprehends the *Scirpus* of Micheli and Tournefort, and the *Scirpocyperus* of Micheli.

1. *Scirpus culmo triquetro folioso, panicula foliosa, pedunculis nudis supra decompositis, spicis confertis.*

The triquetrous, foliose-stalked *Scirpus*, with a foliose, ramose panicle, and thick-set spikes.

The root of this species is composed of a number of blackish, hard, and strong fibres. The stalk rises to a foot and half, or two feet, in height, and is surrounded, from it's base half way up, with leaves: these are ohlong; broader than in the common grass, and carinated, and they terminate in a point. At the top of the stalk there stand a number of shorter leaves, disposed in a radiated manner like a star, and from the center of these rises the panicle, which is very ramose and diffuse, and composed of short and thick-set spikes affixed to naked peduncles. The panicle is very large, and makes a beautiful appearance.

It grows by river sides in some parts of England, but is not very common. C. Bauhine calls it, *Gramen Cyperoides miliaum*; and J. Bauhine, *Cyperus gramineus*.

2. *Scirpus culmo tereti nudo, spicis plurimis pedunculatis terminatricibus.*

The naked, round-stalked *Scirpus*, with numerous, pedunculated spikes.

Bul-
rush.

The root of this species is extremely large and thick, of a dark, blackish-red colour on the outside, and white within; it creeps, a long way horizontally, under the surface of the ground: from this arise a great number of stalks. They are round, smooth, and green, without knots or joints, and of four, five, or six feet high, soft to the touch, and full of a white, spongy pith. They are largest at the bottom, and gradually smaller to the top, where there stands a panicle composed of a number of brown, harsh, short spikes, affixed to moderately long and naked peduncles.

This species is common in almost all standing waters, and about the edges of rivers. C. Bauhine calls it, *Juncus maximus seu scirpus major*. Van Royen, *Scirpus spicis copiosis*.

3. *Scirpus culmo tereti nudo, spica subovata, imbricata, terminatrice.*

The naked, round-stalked *Scirpus*, with an oval, imbricated spike on it's summit.

Club
Rush.

The root of this species is ohlong, slender, and creeping, and is furnished with a great number of fibres. From this arise several stalks, some a foot and half high, some not more than four inches; these are round, smooth, and full of a spongy pith, and are reddish at the bottom, elsewhere green. On it's summit stands a spike of an oval figure, and brown colour, of the bigness of a horse-bean.

This species is very frequent in rivers and ponds, and in damp grounds. C. Bauhine calls it, *Juncus capitulis equiseti*. Haller, *Scirpus caule aphylo, spica imbricata terete*.

The other more singular species of *Scirpus* are, 1. The tall *Scirpus*, with serrated leaves. 2. The pentagonal-stalked *Scirpus*, flowering at the joints. 3. The geniculated, hollow-stalked *Scirpus*. 4. The *Scirpus*, with round, umbellated heads. 5. The Sea-*Scirpus*, with round-clustered heads. 6. The short-headed, Mountain *Scirpus*. 7. The short-headed, dwarf *Scirpus*. 8. The hairy-spiked *Scirpus*.

ERIOPHORUM.

THE calyx of the *Eriophorum* is an imbricated spike, formed of plano-inflex squamæ, of an ohlong, oval figure, separating the flowers: there is no corolla. The stamina are three capillary filaments; the antheræ are erect, and of an ohlong figure.

figure. The germen of the pistil is very small; the style is filiform, and of the length of the squammæ of the cup. The stigmata are three in number; they are longer than the style, and are reflex. There is no pericarpium: the seed is triquetrous and acuminate, and has hairs on it longer than the spike.

1. *Eriophorum culmo foliis tereti, foliis planis.*

The round and foliose-stalked Eriophorum, with flat leaves.

**Cotton
Grass.**

The root of this species is composed of a number of reddish-brown fibres. From this rise several flat, grassy leaves, and among these the stalk; this is a foot, or more, in height, and is round, smooth, and in all things resembles a small rush: on the top of this stands a panicle, which, when ripe, is of the size of a walnut, and white as snow. It is composed of several spikes standing on oblong pedicles, and seems formed of the finest white cotton, or of a substance still finer than that.

This species is not unfrequent with us in boggy grounds. C. Bauhine calls it, *Gramen pratense tomentosum panicula sparsa*. Tournefort, *Linagrostis panicula ampliore*, and Haller, *Linagrostis foliis planis, spicis multiplicibus*.

2. *Eriophorum culmis teretibus, vaginatis, spica membranacea.*

The round, vaginated-stalked Eriophorum, with membranaceous spikes.

**Horsetail
Rush.**

The root of this species consists of a great number of fibres of a brown colour, penetrating deep into the earth; the leaves are rushy and small, and terminate in a point. Among a cluster of these rises the stalk, which grows to six, eight, or ten inches high, sometimes more; it is round, striated, and tender, and about its base has several leaves surrounding it. At the top of each stalk stands a spike, composed of a number of squammæ, which are hoary, and covered with a tomentose matter, and feel as soft as velvet: the whole looks of a beautiful white.

This species is found on boggy ground, in several parts of England. C. Bauhine calls it, *Juncus Alpinus capitulo lanuginoso five schænolaguros*. Morison, *Gramen juncoideis lanatum Danicum*. Linnæus, in his *Fl. Lap.* calls it, *Eriophorum spica erecta, caule tereti*.

3. *Eriophorum culmis triquetris nudis, spica pappo brevior.*

The triquetrous, naked-stalked Eriophorum, with spikes shorter than the down.

The root of this species is composed of a number of small, brown fibres, joined into a tuft at the top. From this arise a number of oblong, slender leaves, of a triangular form, and in the center of these ten or twelve stalks, not exceeding three or four inches in height. These are triquetrous, green, soft, and filled with a spongy pith, and at the top of each stands a short spike erect, formed of squammæ, and furnished with a fine snow white, and tolerably long cottony matter.

This species is not found in England, but in Denmark, Sweden, and some parts of Germany it is not uncommon. C. Bauhine calls it, *Juncus Alpinus bombycinus*. Haller, *Linagrostis foliis triquetris, spica unica oblonga*. Linnæus, in his *Fl. L.* *Eriophorum spica erecta, caule triquetro*.

Class the Third. Order the Second.

TRIANDRIA DIGYNIA.

Plants which have three stamina and two styli in each flower. Of these some have only one flower in each calyx, some several in every one.

Division the First.

Triandria Digynia, which have only one flower in each calyx.

BOBARTIA.

THE calyx is imbricated, and contains only a single flower. The corolla is a glume, composed of two valves, and placed upon the germen: the stamina are three moderately long, slender filaments: the antheræ are thick and oblong: the germen is of an oval figure. The styles are two, oblong and slender; the stigmata are rough; the seed is single, and of an oval figure. Of this genus there is only one known species.

BOBARTIA.

The root is a cluster of brownish fibres, not very long, crooked, and tough; the radical leaves are long, moderately broad, ribbed, and of a dull dusky green. The stalk is round, hollow, jointed, and has four or five leaves on it, one at each joint, like the radical ones, but smaller. The flowers are numerous, not very large, and of a pale greyish-green.

It flowers in August and September.

CORNUCOPIA.

THE calyx of the Cornucopia is a common perianthium, formed of one leaf, very large, and of an infundibuliform shape; its mouth is crenated, obtuse, and patent-erect. The glume is formed of two valves, and contains only one flower; the valves are oblong, obtusely pointed, and equal. The corolla is formed of a single valve, and, in figure, situation, and size, greatly resembles one of the valves of the cup. The stamina are three capillary filaments; the antheræ are oblong: the germen of the pistil is turbinate: the styles are capillary, and the stigmata cirrose. There is no pericarpium: the corolla includes the seed, which is single, of a turbinate figure, convex on one side, and plane on the other.

This genus includes the Cornucopioides of Schenker.

There is only one known species of it.

CORNUCOPIA.

The root is a congeries of thick and tough fibres, spreading various ways under the earth; the radical leaves are six or eight inches long, very narrow, and pointed at the extremities, of a firm substance, and pale green colour; the stalk is round and smooth, and grows to a foot and half high; at its top is placed a cluster of flowers, considerably large, and at first compact, afterwards much expanded.

It grows in wet places in the East. Petiver, who received it from Smyrna, calls it, *Juncus clavatus vaginatus*; and Monti, *Gramen cornutum orientale*.

NARDUS.

THE Nardus has no calyx. The corolla is formed of two valves: the exterior is long, and of a lanceolato-linear figure, it terminates in an arista, or awn, and contains within it the other, which is smaller, and terminates in a shorter awn. The stamina are three capillary filaments, shorter than the corolla; the antheræ are oblong: the

Class 6 & 7 Hexandria & Heptandria.



Yucca folius. Mangine integririmis



Esculus floribus Heptandria



Trichostema



Anthracinum



Scilla



Alce



Eucyrtum



Lantopetalum



Hemerocallis



Aphyllanthus



Allium



Erythronium



Pontederia

Ch. G. G. G.



the germen of the pistil is oblong. The styles are two in number, capillary, reflex, and hoary: the stigmata are simple: the seed is single, of a linear, oblong figure, narrower at top than at bottom, and pointed at each end; the corolla surrounds it, by way of a pericarpium.

1. *Nardus spica recta.*

The upright-spiked Nardus.

The root of this species is composed of a number of dusky coloured, creeping fibres. From this rise a cluster of leaves very small and narrow, not more than three or four inches in length, and among these a number of stalks; these are surrounded at their base with leaves, and there appear somewhat thick; but, where they are naked, they are thin and tender. They do not rise to more than five or six inches in height, and have no knots; from the middle to the top of these stalks reaches the spike. It is erect and slender, composed of oblong and rigid glumes, standing in a series on one side of the stalk, and all pointing one way. The leaves rise from the root, three or four together in a cluster, and are surrounded with a thin membrane of a whitish colour: they usually droop toward the earth, when they leave these vaginæ. This species is frequent in England, and indeed throughout all Europe; it grows in dry pastures, especially in hilly places, and is of no value or use to the farmer, being too short and low to be reached with the scythe. C. Bauhine calls it, *Gramen spar-teum jun-cifolium*. Morison, *Gramen spar-teum jun-ceo folio et minus*. Other authors have distinguished it into two species, a larger and a smaller, but without reason.

SACCHARUM.

THE *Saccharum* has no calyx, but, in the place of one, it has a downy matter, including the flowers singly, and exceeding them in length. The corolla is composed of two valves, equal in size, and without awns; they are of an oblong, lanceolated figure, and hollowed, erect, and acuminate. The stamina are three capillary filaments, of the length of the corolla: the antheræ are oblong: the germen of the pistil is subulate: the styles are two in number, and cirrose; the stigmata are simple. There is no pericarpium; every flower is succeeded by a single seed, of an oblong, narrow, and acuminate figure, which it contains within it.

Of this genus there is but one known species.

Saccharum.

The sugar Cane.

The root of the sugar Cane is thick, oblong, geniculated, and furnished with many fibres. It runs obliquely under the surface of the ground, and is succulent, and very sweet to the taste. The plant rises to eight or nine feet high: the stalk is round, jointed, and two of three inches in diameter at the bottom. The joints are three or four inches asunder, and sometimes, when the soil is rich, they are more. The colour is a greenish-yellow, and at the knots it is yellow in one part, and whitish on the other: the knots themselves swell out beyond the rest of the stalk, and the whole stalk is full of a whitish, succulent, and very sweet matter. The leaves stand singly at the joints; they are very large, three feet in length, and but narrow in proportion; they stand erect, and are of a yellowish-green colour, somewhat scabrous on the surface, and wrapped about the stalk at their base. The top of the stalk is furnished with several leaves, and from among them produces a panicle very ramose, and of three feet in length.

The sugar Cane is a native of the East Indies, the Canary Islands, and of the warmer parts of America, and is propagated by culture in many other places. It loves a rich and damp soil. In some places, particularly in the province of Rio de la Plata, the sugar canes grow to the height and thickness of trees, and, in hot weather, crystals of sugar are found on their surface. The stalk of this plant, bruised and pressed, yields a sweet liquor, which, boiled to a dryness, and properly refined, affords all our several kinds of sugar.

PHALARIS.

PHALARIS.

THE calyx of the Phalaris is a glume, composed of two valves, and containing a single flower. It is very large, compressed, and obtuse: the valves are navicular, compressed, carinated, obtuse above, and have strait edges, which run parallelly, and are somewhat connivent. The corolla is bivalve, and is smaller than the calyx: the exterior valve is oblong, acuminate, and convoluted; the interior is smaller. The stamina are three capillary filaments, shorter than the cup; the antheræ are oblong; the germen is roundish; the styles are two; they are capillary, and the stigmata are villose. Instead of a pericarpium, the corolla itself adheres firmly round the seed, and does not open in any part. The seed is single, smooth, and of a roundish, but acuminate, figure.

This genus comprehends the *Phalaroidea* of Scheukzer and Monti.

In some species there is also a small calycine glume, bivalve, acuminate, and very small, within the calyx described here.

1. *Phalaris radice annua.*

Phalaris, with an annual root.

Canary
Grass.

The root of this species is formed of a little cluster of tender, white fibres. It grows to a foot and half, or more, in height. Its stalk is slender, green, round, and jointed, in four or five places. At every one of the joints stands a single leaf, oblong, narrow, and terminating in a point, like the leaves of the rest of the grasses. At the head of every stalk stands a single, beautiful spike, an inch in length, of a turbinated figure, and formed of squammæ large and beautiful, variegated with a pale green and white.

This species is not a native of England; but in the Canary Islands, and in many of the warmer parts of Europe, it grows in the corn-fields, and in other dry places. C. Bauhine calls it, *Phalaris major femine albo*. J. Bauhine, and others, simply, *Phalaris*.

2. *Phalaris panicula oblonga.*

The oblong, panicled Phalaris.

The root of this species is oblong, jointed, and creeping; the joints send out a number of fibres, which make their way deep into the mud, while the body of the root runs along but just under the surface. The plant rises to four or five feet in height; its stalk is very like that of the common reed, round, jointed, and smooth; the joints are six or seven on each stalk, and from each there grows a long and narrow grassy leaf, of a deep green colour; this surrounds the stalk at its base, and, when it leaves it, is an inch in breadth, and seven or eight in length. The upper surface of the leaf is smooth, but, if the finger be drawn over the under side, some roughness will be perceived. At the top of the stalk stands a panicle, not very diffuse, of a purplish or whitish colour, and of six or seven inches in length.

This species is common with us about waters. C. Bauhine calls it, *Gramen arundinaceum spicatum*. Morison, *Gramen arundinaceum acerola gluma*.

3. *Phalaris spica cylindrica.*

The cylindric-spiked Phalaris.

The root of this species is composed of a cluster of fine white fibres. The stalk rises to a foot and half, or more, in height; it is bulbous, as it were, at the bottom; slender, round, and jointed all the way up. The leaves, which grow immediately from the root, are six or eight inches long, of a pale greyish-green colour, and of a third of an inch in breadth, firm, and a little rough to the touch: at every joint of the stalk grows such a leaf also, but shorter, surrounding the stalk a long way before it leaves it. The top of the stalk is terminated by a long, slender spike, not ill representing the tail of a rat, four inches in length, and not so thick as a man's little finger, of

of a greyish colour. This is soft to the touch, if the hand be drawn up; but very rough, if the contrary way.

This species is frequent with us in pastures and meadows; it loves a damp soil. C. Bauhine calls it, *Gramen typhoides asperum*. J. Bauhine, *Gramen cauda muris torajoris longa majus*.

PHLEUM.

THE calyx of the Phleum is a bivalve glume, containing a single flower; it is oblong, linear, compressed, and opens with two points at the apex. The valves are strait, hollow, equally compressed, and they terminate in aristæ, or awns. The corolla consists of two valves, and is shorter than the cup: the exterior valve is larger than the interior, and surrounds it. The stamina are three capillary filaments, longer than the cup: the antheræ are oblong, and bifurcated. The germen is round; the styles are two, and are capillary and reflex; the stigmata are plumose. There is no pericarpium; the calyx and corolla include the seed, which is single and roundish.

This genus comprehends the Typhoides of Scheukzer.

1. *Phleum spica cylindracea longissima.*

The very long cylindric-spiked Phleum.

The root of this species is a small, white tubercle, to which are affixed a great number of capillary fibres, white and insipid to the taste. The plant rises to two or three feet in height. Its stalk is slender, round, green, and, when the spike is full grown, is scarce able to support itself erect. The leaves, which grow immediately from the root are ten or twelve inches long, and about a third of an inch broad: the stalk has three or four joints, and at each of them a leaf surrounding it a great way, then separating from it, and resembling the others; the top is terminated by a spike of four or five inches long, of the thickness of a man's little finger, and green at first, but white, when ripe.

This is not met with in England; in Germany, France, and Italy, it is common. It grows among bushes. C. Bauhine calls it, *Gramen typhoides maximum spica longissima*.

2. *Phleum spica ovali-cylindracea.*

The oval-spiked Phleum.

The root of this species consists of a few fibres, whitish and divaricated at their extremities. The leaves are five inches long, and about a quarter of an inch in diameter; sharp-pointed, and of a greyish-green colour. The stalk rises to ten or twelve inches in height, and is slender, smooth, and jointed; at every joint stands a leaf, surrounding it stalk a great way. The part which surrounds the stalk is, indeed, in the upper leaves, longer than the rest. The top is terminated by a short spike, of an oblong figure, tending to oval; three quarters of an inch long, and about a third of an inch in diameter, smaller at the top than at the bottom; this is greenish at first, and appears hairy from the aristæ of the glumes; when fully ripe, it is black.

This is frequent in Germany, Sweden, and Lapland. I have also met with it at the side of a wood belonging to the seat of Th. H. Apreece, Esq. at Wasingley in Huntingdonshire. Scheukzer calls it, *Gramen typhoides Alpinum spica brevi densa et veluti villosa*. Rudbeck, *Gramen typhoides Alpinum spica nigra brevi*.

ALOPECURUS.

THE calyx of the Alopecurus is a bivalve glume, containing a single flower. The valves are hollow, of an ovato-lanceolated figure, equal in size, and compressed. The corolla is univalve: the valve is concave, and of the length of the cup, and has a very long aristæ inserted into its back, near the base. The stamina are three capillary filaments: the antheræ are bifurcated at each end. The germen is roundish; the styles are two in number; they are cirrous and reflex, and longer than the cup; the

E e e

stigmata

stigmata are simple. There is no pericarpium. The corolla itself remains, and contains the seed, which is single, and of a roundish figure.

This genus comprehends the *Myosmordea* of Scheukzer.

1. *Alopecurus culmo erecto.*

The erect-stalked Alopecurus.

The root of this species consists of a few white fibres, collected into a cluster, and penetrating deep into the earth, but, several plants of it usually growing together, the whole often forms a tuft of very considerable extent; from this there rise a great number of leaves, long, narrow, smooth, and pointed at the ends. Among these rise up stalks of different height; some two feet, or more; some less than a foot: they are round, slender, hollow, and smooth, of a pale green, and have four or five joints each. The joints are less protuberant than in most of the other species, and are each furnished with a single leaf, which surrounds the stalk a great way before it leaves it. The top of the stalk is terminated by a long and very slender spike, three or four inches in length, and about a third of an inch in thickness. It is soft to the touch, and of a purple colour. The stalks are frequently also purple.

This species is frequent with us in corn-fields. C. Bauhine calls it, *Gramen typhoides spica angustiore*. Morison, *Alopecuroides spica longa tenuiore*. Scheukzer, *Gramen spicatum spica cylindracea, tenuissima, longiore*.

2. *Alopecurus culmo infracto.*

The crooked-stalked Alopecurus.

Spike of Float-grass.

The root of this species is a cluster of small, crooked, white, branched fibres. From these rise a cluster of leaves, six or eight inches long, a quarter of an inch broad, and of a fine green colour. From among these grows a stalk, round, hollow, and of a pale green colour: this grows to two or three feet in length, but does not stand erect; it is crooked from joint to joint, and frequently touches the ground at every, or almost every, joint; taking root, when it does so, and propagating itself abundantly. Every joint has it's separate single leaf, inclosing and surrounding the stalk a great way, and, when separated from it, four, five, or more, inches long, and of a pale greyish-green colour. At the top of the stalk stands a spike, two or three inches long, and very slender, soft to the touch, and of a pale greyish-green colour.

This species is frequent with us; it usually grows in wet places, sometimes in the water: when it grows in water, it's stalks are very long and crooked, and it's lower leaves usually wanting. C. Bauhine calls this, *Gramen aquaticum, geniculatum, spicatum*. Others, *Gramen fluviatile spicatum*. Linnaeus, in his *Fl. Laponica*, calls it, *Alopecurus aristis glumæ longioribus*; and a variety of it with shorter awns, *Alopecurus aristis glumæ equalibus*: this last always grows in water.

PANICUM.

THE calyx of the *Panicum* is an involucre, consisting of several leaves, and containing only a single flower: the leaves are capillary, and unequal in their insertion. The glume contains only a single flower: it is composed of three valves; they are all of an ovato-acuminated figure, and the third is smaller than the rest, and placed behind one of the others. The corolla consists of two valves of an ovato-acuminated figure, one smaller and flatter than the other. The stamina are three short capillary filaments; the anthers are oblong. The germen is roundish; the styles are two in number, and capillary. The stigmata are plumose: the corolla supplies the place of a pericarpium, adhering firmly every way to the seed, which is single, roundish, and flat on one side.

This genus comprehends the *Panicea* of Scheukzer. The flat valve of the corolla is, in some of the species, terminated by an arista; and there is one species that has no involucre.

1. *Panicum*

1. *Panicum floribus conglomerato-spicatis, levibus, arista dimidio brevioribus.*

The conglomerate-spiked Panic, with flowers not half so long as the arista.

The root of this species is composed of a great tuft of fibres, white, thin, branched, and penetrating every way into the ground, whence it is not easy to get them up. From these rise a cluster of short, grassy leaves, harsh to the touch, and of a whitish-green colour; and among these several stalks, round, jointed, of a pale green colour, and seldom exceeding five or six inches in height, often not above three or four. Every stalk has two or three joints, and at it's bottom is often procumbent, and takes root at those which touch the ground. The several joints have each their single, short, narrow, and pointed leaf, of a pale greyish-green colour, and surrounding the stalk at the base. The top of the stalk is terminated by a spike, short and thick, of a brownish, or reddish, colour, rough to the touch, covered with prickly awns and even, sticking to people's cloaths, who come in the way of it.

This species is common with us in damp pastures. C. Bauhine calls it, *Gramen panicum spica aspera*. Tournefort, *Panicum spica simpliciter et aspera*; and Van Royen, *Panicum spica composita aristis spica longioribus*.

2. *Panicum spicis alternis, remotis, declinatis, compositis.*

The compound, declinated, alternate, and remote-spiked Panic.

The root of this species is a tuft of considerably large, white fibres, which spread every way in the earth, and fix themselves very firmly there: there rise from this a cluster of leaves, long, narrow, and of a pale green colour; among these rises a stalk, or sometimes several, of three, four, or even five feet in height, smooth, round, green, jointed, and hollow; at every joint of this stalk stands a leaf, which surrounds it a long way at it's base, and afterwards extends to six or eight inches in length, and is of a pale green colour, and pointed at the extremity. At the top of the stalk stands a large cluster of spikes, in the whole four or five inches in length, of a reddish, or blackish, colour, and formed of a number of short spikes, placed very close to one another. This species varies, sometimes having arista on the spikes, sometimes not. C. Bauhine has unnecessarily made two species of it, from this variation.

It is frequent in damp places, and about the sides of ponds and rivers, in England, and most other parts of Europe. C. Bauhine calls it, *Gramen Panicum spica divisa*. Tournefort, *Panicum vulgare spica multiplici asperiuscula*, and *Spica multiplici longis aristis circumvallata*.

3. *Panicum panicula laxa, flaccida, foliorum vaginis pubescentibus.*

The lax and flaccid panicled Panic, with the vagines of the leaves hoary.

Millet.

This, though the plant which produces the common Millet, is properly, according to all it's characters, of the Panic kind; it's root consists of a number of large and thick fibres. The plant rises to two, three, or more feet in height: it's stalk is round, jointed, and hollow; the joints stand very close to one another. The leaves are a foot, or more, in length, and an inch broad: they are hairy, all over, but principally in that part where they surround the stalk: they are striated, and somewhat rigid. At the top of the stalk stands a large lax panicle, hanging in great part downward. It is of a dark blackish colour, and the pedicles are very long and slender.

This is known in many parts of Europe for the use of the table; it loves a light, rich soil. C. Bauhine calls it, *Milium semine luteo*; and describes three other of it's varieties with a white, a black, and a yellowish red seed, under the name of so many different species.

4. *Panicum*

4. *Panicum spica composita ariflis flosculo brevioribus.*
The composit-spiked Panic, with awns shorter than the flower.

Panic.

The root of this species is composed of a cluster of considerably thick fibres, white and ramose, and penetrating deep into the ground. The stalk rises to four feet in height; it is round, jointed, hollow, and of a pale green colour; the joints swell out considerably beyond the rest of the stalk, and stand pretty frequent. There are often six or eight of them on the stalk; at each of these stands a single leaf, which surrounds it for two inches, or more, at the base, and then grows from it long, and three quarters of an inch in breadth, pointed at the end, and of a fresh and agreeable green colour. At the top of the stalk grows a panicle of a foot, or more, in length, but not very broad; it is so heavy, and it's peduncles so tender and weak, that it usually bends toward the ground. It is of a glossy surface, and is sometimes of a whitish, sometimes of a yellowish, sometimes of a reddish, colour, and the seed varies in colour in the same manner.

This is cultivated in many parts of Germany, and elsewhere; it loves a rich soil. It is a native of the East Indies, but thrives very well with us. Cluſius calls it, *Panicum vulgare*. C. Bauhine, *Panicum Italicum* five *panicula majore*.

MIL I U M.

THE calyx of the Milium is a glume composed of two valves, and containing only a single flower. The valves are of an ovated figure, and acuminate. The corolla consists of two valves, and is smaller than the cup; the valves are oval, and one of them is larger than the other. The stamina are three very short capillary filaments; the antheræ are oblong. The germen of the pistil is roundish; the styles are two, and are capillary; the stigmata are formed like pencils: the corolla adheres to the seed, and supplies the office of a pericarpium: the seed is single and roundish. The Milium differs from the panic, in that it's calyx has only two valves, that of the panic three.

1. *Milium floribus dispersis.*
The scattered-flowered Millet.

**Millet
Grass.**

The root of this species is thick, and of a reddish colour, and is furnished with a great number of fibres. The stalk is round, green, jointed, and smooth, and rises to three feet in height. The joints stand at considerable distances from one another, and at each there is a leaf which surrounds the stalk for a great way at the base, and, when it leaves the stalk, it is half an inch broad, and four or five inches long. At the top of the stalk grows a panicle four or five inches long, and as much in diameter; sometimes considerably larger, formed of small flowers, and of a brownish colour.

This species is frequent with us in woods, and sometimes in corn-fields. C. Bauhine calls it, *Gramen sylvaticum panicula miliacea sparsa*. Lobel, *Miliaceum gramin*; and Linneus, in his Hort. Cliff. *Milium glumis dyphyllis*.

A G R O S T I S.

THE calyx of the Agrostis is a glume, consisting of two valves, and inclosing a single flower; it is of an acuminate figure. The corolla is also of an acuminate figure, and composed of two valves: it is scarce so long as the cup, and one of the valves is larger than the other, and aristated. The stamina are three capillary filaments, longer than the corolla; the antheræ are furcated. The germen is roundish; the styles are two in number; they are reflex and hairy, and the stigmata are like them. The corolla serves in the place of a pericarpium; it surrounds, and every way incloses, the seed, which is single, roundish, and pointed at each end.

1. *Agrostis*

1. *Agrostis petalo exteriore aristam rectam, strictam, longissimam exserente.*
The Agrostis, with an extremely long and fine arista, growing from the exterior petal.

The root of this species consists of a number of long, whitish, crooked, and divaricated fibres. The stalk rises to three or four feet in height; it is naturally of a yellowish-green colour, but often reddish. It is round, hollow, and jointed in two or three places. At every joint there stands a single leaf, which surrounds the stalk a long way, and, when it leaves it, hangs down to a foot in length; it is narrow, and of a pale green colour; at the top of the stalk stands a panicle a foot, or more, in length, composed of very glossy flowers, usually brown, sometimes yellow, sometimes of a fine purple. From the root there grow a great cluster of leaves of a deeper green colour than those on the stalks, and a foot and half in length.

This species is not unfrequent with us in woods, and sometimes among corn, or even in meadows. C. Bauhine calls it, *Gramen segetum altissimum panicula sparsa*. J. Bauhine, *Gramen capillatum*.

2. *Agrostis panicula oblonga, petalo exteriori basi villosa, arista torta calyce longiore.*

The oblong, paniced Agrostis, with the exterior petal hairy at the base, and with a crooked, long awn.

The root of this species consists of a cluster of white fibres, very long, and spreading under the surface. From these rise a number of leaves a foot and half in length, and about half an inch in diameter, thin, and of a deep green colour. Among these rise several stalks; they grow to four or five feet high, and are round, hollow, tender, and have three or four joints. At every joint there stands a single leaf, which, at the base, surrounds the stalk for a great way, and, when it leaves it, is half an inch broad, and grows to eight or ten inches in length; at the top of the stalk stands a long and large panicle, contracted into the form of a spike, of a brown, or purplish-white, colour, and very glossy. From the middle of the back of the exterior petal, there rises a fine crooked or twisted awn, which is somewhat longer than the calyx.

This species is common in many parts of Europe, but less so in England than elsewhere. I have met with it in some of the woods in Leicestershire. Scheukzer calls it, *Gramen avenaceum montanum panicula angusta et dilutissima, fusco-albicante et papposa*.

3. *Agrostis culmo repente foliis radicalibus brevioribus, folii supremi vagina ventricosa.*

The creeping-stalked Agrostis, with leaves longer than the stalks, and with a bellied vagina.

The root of this species is composed of a cluster of moderately large fibres. From this grow a great number of leaves a foot and half in length, not half an inch broad, and of a glossy green colour. Among these rise a great number of stalks, round, hollow, jointed, and not more than eight or ten inches in height. Each stalk has two or three joints, and at every joint there stands a single leaf, the base of which surrounds the stalk, and which is about three inches long, after it leaves it. The one or two under leaves form simple vaginæ round the stalk, like the other grasses; but the upper one is not a simple, but an inflated, vagina, swelling out into a kind of belly; this is usually of a whitish green, sometimes purplish. At the top of the stalk stands a short and soft spike, of a greenish colour, and soft to the touch.

This species is very frequent in most parts of Europe, but less so in England than elsewhere. I have found it, in some plenty, at the side of Waddingley wood. Scheukzer calls it, *Gramen caninum supinum minus*. Parkinson, *Gramen caninum supinum arvense*.

LAGURUS.

THE calyx of the Lagurus is a glome, containing a single flower, and consisting of two valves of an oblong, linear figure, compressed, very thin, patulous, and each terminating in a bristle, pennated with several fine hairs. The corolla is also a bivalve glome; it is thicker than the cup: the exterior valve is long, and terminates in two aristæ, which are small and strait. The back of the same valve also sends out from its middle a third arista, of a reflex, twisted figure: the interior valve is small and acuminate.

The stamina are three capillary filaments; the antheræ are oblong. The germen of the pistil is turbinate; the styles are two in number, and setaceous: the stigmata are villose: the corolla serves the office of a pericarpium, and incloses the seed, which is single, oblong, and aristated. This genus comprehends the Alopecuroides of Scheukzer.

*Lagurus spica ovata.**The oval-spiked Lagurus.*

The root of this species is composed of a great many fine white fibres. From this grow a number of leaves, four or five inches long, a third of an inch broad, and of a pale green colour: among these rise the stalks, three, four, or more, from the same root; they grow to two feet, or more, in height, and are round, jointed, and hollow. At every joint there stands a single leaf, surrounding the stalk with its base, and growing three or four inches long from it; these, as well as the leaves, rising immediately from the root, are very soft to the touch, and are covered with fine short hairs. At the top of every stalk stands a single spike, of about two inches long, and so thick, that it looks almost roundish. It is of a greyish-green colour, and furnished with a great number of aristæ, which stand a little way out from it.

This species is common in Italy and Germany, but is not a native of England. C. Bauhine calls it, Gramen alopecuroides spica rotundiore.

DACTYLIS.

THE calyx of the Dactylis is of a roundish figure, obtuse, and larger than the flower. It contains sometimes only one flower, sometimes two, and is formed of two valves, equal in size, but the exterior one somewhat bellied. The corolla is an obtuse glome, composed of two valves, and covered by the calyx: the exterior valve is broader, and more bellied than the interior one, which is smaller and flatter. The stamina are three capillary filaments, of the length of the corolla: the antheræ are bifurcated. The germen of the pistil is of a turbinate form; the styles are two; they are capillary and patent: the stigmata are plumose. There is no pericarpium: the calyx and corolla both surround the seed, and at a proper time let it out. It is single, roundish, depressed on one side, and convex on the other.

Some of the species of this genus have one flower in each glome, some two.

1. *Dactylis spicis numerosis alteris patentibus, calycibus unifloris.**The numerous, alternate-spiked Dactylis, with uniflorous cups.*

The root is a congeries of white and tough fibres: the leaves are long, narrow, thin, and of a bright green; the stalk is round, jointed, and tall; the top of it sustains a long and large panicle, composed of a number of alternate spikes of a whitish, or greyish, green, considerably thick and naked. It is a native of Jamaica and New Spain. Sir Hans Sloane calls it, Gramen Dactylon majus panicula longa, spicis plurimis nudis crassis.

The other species are, 1. The four-spiked Dactylis of Barbadoes. 2. The Dactylis, with two narrow, linear spikes, terminating the stalk. 3. The Dactylis, with numerous alternate spikes close to the stalks.

TRIANDRIA DIGYNIA.

Division the Second.

Such as have a number of flowers contained in every calyx.

MELICA.

THE calyx of the Melica is a glume, composed of two valves, and containing two flowers. The valves are of an oval figure, hollow, and nearly equal in size. The corolla is composed also of two valves; they are of an oval figure, not aristated, and one of them is hollow, the other flat. The stamina are three capillary filaments, of the length of the flower: the antheræ are oblong, and bifurcated at each end. The germen is of an ovato-turbinated figure: the styles are two; they are setaceous and patent: the stigmata are oblong and villose. There is no pericarpium; the corolla includes the seed, which is single, and of an oval figure, and, when mature, lets it fall out.

Melica floribus sub culmo pendulis.

The Melica, with flowers pendulous under the stalks.

The root of this species is long, slender, and creeping; it runs a long way under the surface of the earth, and in it's progress sends out a number of fibres. The stalk rises single, to the height of a foot, or more: it is very slender, round, hollow, jointed, and of a purple colour toward the bottom, green every-where else. At every joint there stands a single leaf, which incloses the stalk in a kind of vagina at the base, and grows from it to the length of three, four, or five inches; there are usually three such leaves on a stalk; a few leaves rise also immediately from the root, and are shorter than those of the stalk; both are very narrow. The stalk terminates in a kind of spike, very slender, and of a purplish colour, formed of a series of flowers, all hanging on one side. It usually stoops a little at the top, and the flowers stand singly on very slender peduncles.

This species is frequent in the woods in many parts of Europe; we have it in England, but it is more rare with us. I have met with it in Walsingham-wood in Huntingdonshire. C. Bauhine calls it, *Gramen avenaceum locustis rubris montanum*.

AIRA.

THE calyx of the Aira is a glume, formed of two valves, equal in size, of an ovato-lanceolated figure, and acuminate; it contains two flowers. The corolla is composed of two valves, extremely resembling those of the cup; one of these often produces an arista, near twice as long as the flower. The stamina are three capillary filaments, of the length of the flower: the antheræ are oblong, and furcated at each end. The germen of the pistil is oval; the styles are two; they are setaceous and patent. The stigmata are hoary: the corolla serves the office of a pericarpium, and incloses the seed, which is single, and of an oval figure. There are some species of this genus, in which male flowers are mixed with these hermaphrodite ones, under the same common cup; in this case the male flower produces an arista, the female does not.

1. *Aira panicula rara, calycibus albis.*

The open panicled Aira, with white cups.

The root of this species consists of a multitude of thin and long blackish fibres. From this grow four, five, or more, leaves, a foot long, and scarce a tenth of an inch broad, of a deep green colour, and covered with a few scattered white hairs. Among these rises a stalk a foot and half high, and very slender; so as scarce to be able to support itself; on the summit of this stalk stands a loose, open panicle, composed of a few flowers, the cups of which distinguish themselves, at a distance, by their fine white colour.

This

This species is frequent in some parts of Europe, but we have it not in England. C. Bauhine calls it, *Gramen nemorosum paniculis albis, capillaceo folio*; and Scheukzer, *Gramen Alpinum nemorosum paniculatum, foliis angustissimis locustis splendentibus aristatis*.

2. *Aira panicula rara, calycibus fuscis.*

The loose-panicled Aira, with brown cups.

The root of this species is composed of a multitude of small white fibres; from this grow a cluster of twenty, or more, leaves, five or six inches long, extremely narrow, and somewhat rounded; among these rise three or four stalks; they are very slender, and grow to five, six, or eight inches high; on every stalk there stand two, three, or four leaves, very narrow, and of a dusky green; and at the top a loose panicle, composed of small shining cups, of a purplish colour toward the base, and paler in the other parts, and collected together in form of a spike.

This is found in the woods in Germany, but it is not common in England. Scheuckzer calls it, *Gramen avenaceum paniculatum Alpinum, foliis capillaceis brevibus locustis purpuro-argenteis, splendentibus, et aristatis*.

3. *Aira foliis pubescentibus, panicula contracta, sterculo hermaphrodito mutico, masculo arista uncinata calyce brevior.*

The soft, hoary-leaved Aira, with male flowers armed with short arista, and female without any.

The root of this species is composed of a number of large white fibres, which spread themselves every way under the surface. From this grow six or eight leaves, six inches, or more, in length, about a third of an inch in breadth, very soft to the touch, and covered with a fine, short, soft hoariness. Among these rises a stalk of a foot and half, or more, in height; round, hollow, slender, and jointed: at every joint stands a single leaf, which surrounds the stalk at it's base, and grows from it to four or five inches in length: both the stalk itself, and these leaves, are covered with the same white, hoary matter, with the lower leaves. At the top stands a panicle of a whitish, or pale reddish, colour, an inch and half long, and half an inch in diameter, soft to the touch, like the rest of the plant.

This species is extremely common with us every-where, in meadows and pastures. Dalechampe calls it, *Gramen lanatum*. C. Bauhine, *Gramen pratense paniculatum molle*; and Van Royen, *Aira sterculo masculo aristato, feminino mutico*.

P O A.

THE calyx of the Poa is a glume, containing several flowers, arranged into a double or distichous spike, of an oblong, oval figure. It is formed of two valves, of an ovato-acuminated figure, and without awns. The corolla is composed of two valves, of an ovato-acuminated figure, hollow, compressed, and somewhat longer than the cup, and without awns. The stamina are three capillary filaments; the antheræ are bifurcated. The germen of the pistil is roundish; the styles are two; they are reflex and hairy, as are also the stigmata. The corolla supplies the place of a pericarpium; it adheres every way to the seed, which is single, of an oblong figure, compressed, and pointed at each end.

1. *Poa panicula diffusa, spiculis trifloris glabris, culmo erecto tereti.*

Great Meadow Grass.

The erect Poa, with smooth, diffuse, triflorous spicule.

The root of this species consists of a great number of capillary, whitish fibres, variously entangled one with another; from these arise a large cluster of leaves, six or eight inches long, and a quarter of an inch broad. The stalk rises from the midst of these; it grows to about a foot and half in height, and is smooth, green, hollow, and jointed in three or four places. At every joint stands a leaf, whose base makes a vagina, surrounding

surrounding the stalk for three inches, sometimes much less. From this it grows to three or four inches long, and is of the same breadth with the radical leaves, and pointed at the end. At the top of the stalk stands a panicle, diffused every way, but not drooping; it is two inches, or more, in length, an inch and half in diameter, and of a pale green colour. The panicle often has eight pair of peduncles, each supporting several flowers.

This species is extremely common in our meadows. Theophrastus calls it, *Poa*. C. Baubine, and others, *Gramen pratense paniculatum majus latiore folio*.

2. *Poa panicula diffusa, angulis rectis, spiculis obtusis, culmo obliquo compresso.*

Common Meadow Grass.

The diffuse-panicked *Poa*, with an oblique, compressed stalk.

This is the most common of all the grasses with us, and makes principally the green covering of most of our fields and meadows. Its root is composed of a multitude of long, slender fibres, which penetrate deep into the earth, and usually grow together in vast tufts; from these arise leaves long, narrow, and of a beautiful green, in vast numbers. The stalks rise among these, and are scarce erect, usually oblique; they are six or eight inches long, of a whitish colour, round and jointed, and have short, diffuse panicles, of a whitish colour, on their extremities.

This species is called by Ray, *Gramen pratense minus et vulgatissimum*. C. Baubine calls it, *Gramen pratense paniculatum minus*.

B R I Z A.

THE calyx of the Briza is a hivalve glume, patent, and containing several flowers, which are arranged into a distichous spike, of a cordated figure. The two valves are cordated, hollow, and equal: the corolla is composed of two valves. The lower valve is of the size and shape of the cup: the upper valve is small, plane, and roundish, and shuts up the hollow of the other. The stamina are three capillary filaments; the anthers are oblong. The germen of the pistil is roundish; the styles are two; they are capillary and crooked: the stigmata are plumose. The corolla serves in the place of a pericarpium, inclosing the seed, and, when ripe, dropping it out. The seed is single, very small, roundish, and compressed.

This genus comprehends the *Tremula* of Scheukzer, and the *Phalaroides* of others.

1. *Briza spiculis ovatis, calyce spiculis brevioris.*

The Briza, with short spicula, and the cup shorter than the flower.

Common Quaking Grass.

The root of this species is composed of a few short, greyish, or brownish, fibres. From this rises a cluster of ten or twelve little leaves; they are three inches long, and moderately broad; among these rises up sometimes a single stalk, but more usually there are two, three, or more. The plant grows to eight or ten inches high; the stalk is round, and commonly has two joints; at each of these stands a single leaf, which surrounds it, in manner of a vagina, for a long way at its base, and from this grows loose to the length of an inch or two, and is narrow, rigid, and pointed. The top of the stalk is furnished with a number of large and beautiful glumes, supported on long and extremely slender peduncles, so that the least breath of air sets them a trembling. They are at first of a greenish, afterwards often of a brownish-red, colour.

This species is common in our meadows and pastures. C. Baubine calls it, *Gramen tremulum majus*. J. Baubine, *Gramen tremulum*. Morison, *Gramen tremulum vulgare locustis rotundioribus*.

This is the grass, the pistil of which is described in the Philosophical Transactions, under the name of a plant in Semine. Its germen is called the bulbous root of the plant. The author of the paper is Mr Baker.

2. *Briza panicula spicata, spicis lanceolatis.**The spike-panicled Briza, with lanceolated spikes.*Love
Grass.

The root of this beautiful grass is formed of a number of small fibres, connected at the top into a kind of head : from this arise eight or ten leaves, which are four inches, or more, in length, and about a fifth of an inch broad, and of a whitish-green colour. In the midst of these rises the stalk ; it grows to be a foot high, and is moderately thick, and usually has two joints : at each joint is a leaf, the base of which makes a kind of vagina, surrounding the stalk, and from this part it grows loose to an inch or two only in length, and is narrower than the radical leaves. At the top of the stalk stand a number of glumes, extremely beautiful, three quarters of an inch long, and of a bright white colour. They resemble the glumes of the common gramin tremulum in shape, but they are affixed to considerably strong and rigid stalks, not such tender ones as they are.

This species is not unfrequent in France, Germany, and Italy, but we have it not in England. C. Bauhine calls it, *Gramen panicula elegantissima sive eragrostis major*.

UNIOLA.

THE calyx of the Uniola contains several flowers, and is composed of six valves laid together in a distichous, imbricated manner. They are subulatus, or nearly of that figure, compressed, navicular, and carinated ; one of them shuts the other, and the last pair contains a spike of an oval, somewhat compressed figure, with an acute edge, and containing several flowers. The corolla is a bivalve glume : the valves are of a lanceolato-compressed figure, like those of the cup, and the inner valve appears somewhat higher than the outer one. The stamina are three capillary filaments : the anthers are oblong and linear. The germen is conic ; the styles are two, erect and simple ; the stigmata are hoary. The corolla performs the office of a pericarpium, inclosing the seed, which is single, and of an ovated, oblong figure.

Of this genus there is but one known species ; it is sufficiently distinguished by its characters, and needs no further description. Plukenet has figured it, T. 32. f. 6.

CYNOSURUS.

THE calyx of the Cynosurus is a partial involucreum, large, triphyllous, and lateral : the foliole pennated and permanent.

The glume is formed of two valves, and contains several flowers. The valves are equal, linear, and acuminate. The corolla consists of two valves ; the exterior is the longer, and is hollowed and arifated ; the interior is shorter, plane, and has no arista. The stamina are three capillary filaments ; the anthers are oblong ; the germen is turbinate ; the styles are two in number, villous and reflex ; the stigmata are simple. The corolla serves the office of a perianthium, surrounding and covering the seed, which is single, of an oblong figure, and pointed at each end.

1. *Cynosurus bracteis pinnatifidis.**The Cynofure, with pinnatifid bractea.*Crested
Grass.

The root of this species consists of a great number of slender, white fibres, collected into a head, and dispersing themselves every way into the earth. From this rises a cluster of small leaves, not more than two or three inches long, and very narrow ; in the midst of these rises a stalk of two feet high, very slender, and jointed ; at every joint stands a leaf, which, after it has surrounded the stalk for some inches in form of a vagina, grows to two or three inches in length from it, and is very narrow and pointed. The stalk is terminated by a spike of flowers of a peculiar figure ; it is formed of two series of cristated and sinuolated glumes, turning the same way ; it is an inch and a half in length, and about a fifth of an inch in thickness ; its colour is a brownish-green.

This species is frequent in our meadows and pastures. C. Bauhine calls it, *Gramen cristatum sive spica cristata laevi*. J. Bauhine, *Gramen cristatum*. Parkinson, *Gramen cristatum*.

cristatum Anglicum. A variety of this is described by C. Bauhine, also, under the name of a different species, with a hairy spike.

2. *Cynosurus spicis quaternis terminatricibus horizontalibus.* Cock's:
The *Cynosure* with four horizontal, terminatory spikes. Foot Grass.

The root of this species is white, creeping, and of a sweet taste: from this rise, at two different seasons of the year, two kinds of stalks and leaves. In the spring it produces a number of long, flexile, jointed stalks, which trail upon the ground, and take root at the knots; from these joints, opposite to the roots, there rise clusters of short, hairy leaves, surrounding one another: in the summer it produces other stalks, which are erect, and grow to a foot high; these are slender, jointed, and have, at every joint, a single leaf, surrounding the stalk at it's base, and afterwards hairy, but short and narrow. The top of the stalk is terminated by a number of spikes, usually four, sometimes five or six; they are short, narrow, and imbricated.

This species is extremely common in France, Italy, and Spain, but it is not a native of England. C. Bauhine calls it, *Gramen dactylon folio arundinaceo majus*.

3. *Cynosurus panicula secunda glomerata.* Hard Gra:
The *glomerated-panicled Cynosurus*. dow Grass.

The root of this species is composed of a few thick, white fibres: from this rise six or eight leaves, of a pale greyish-green, five inches long, a fifth of an inch broad, and very rough to the touch. Among these rises a stalk, a foot and a half high, round, jointed, moderately thick, and furnished with a leaf at every joint, like the radical leaves, but shorter, very rough to the touch, and embracing the stalk at it's base, in form of a vagina. The top of the stalk supports a panicle, formed of three parts, conglomerated at top, and also harsh to the touch, an inch and a half long, and of a brownish, or reddish, colour.

This species is very frequent in our meadows, and discovers itself to the touch by it's roughness. C. Bauhine calls it, *Gramen spicatum folio aspero*; Læfilius, *Gramen pratense spica compacta divulsâ*.

BROMUS.

THE calyx of the *Bromus* is a bivalve, patent glume, containing several flowers, collected into an oblong, oval spike. The valves are of an ovato-oblong figure, pointed, but without awns, and the under one is smaller than the other. The corolla consists of two valves; the lower one is the larger; it is of the size and figure of the cup, hollow, obtuse, and, below it's point, it emits a strait arista; above the insertion of this arista it is bifid: the upper valve is small, of a lanceolated figure, and has no arista: the stamina are three capillary filaments, shorter than the flower; the anthers are oblong: the germen of the pistil is turbinate; the styles are two; they are short, reflex, and villous: the stigmata are simple: the corolla serves the office of a pericarpium; it shuts close over the seed, and covers it every way. The seed is single and oblong, convex on the one side, and hollowed on the other.

This genus comprehends the *Festuca* of Scheuchzer, and the *Ægilops* of Dillenius.

1. *Bromus panicula nutante, spiculis ovato-oblongis.* Tall Oat
The *bending-panicled Bromus*, with ovato-oblong spikes. Grass.

The root of this species is composed of a great number of slender, white fibres, variously interwoven with one another. From this arise twenty or thirty leaves, each five or six inches long, and more than a quarter of an inch broad: they are of a pale green, and hairy at the edges. In the midst of these is a stalk, and, as this grows up, the radical leaves wither: this stalk is, when full grown, two or three feet high, very slender, and jointed in five or six places; these joints have each a leaf, surrounding the stalk at it's base, and growing to four or five inches in length from it, somewhat broad, and pointed at the end. At the top stands a large, diffuse panicle, the several parts of which hang on long, and very slender, filaments. C. Bauhine calls this, *Festuca avenacea sterilis elatior*; J. Bauhine, *Ægilops forte Matthioli*.

2. *Bromus panicula diffusa, spiculis teretibus.* Bush Dat
The diffuse-panicled Bromus, with rounded spikes. Grass.

The root of this species is composed of a great number of white, and somewhat thick, fibres. From this rise eight or ten leaves, a foot, or more, in length, and about a third of an inch in breadth; these wither, soon after the stalk appears. The stalk grows to three feet, or more, in height, and has usually four joints, with a single leaf at each, surrounding them at the base, in the manner of the vagina: while they surround the stalk, they are striated, and hairy; afterwards, they are almost smooth, and grow to a foot in length. The top of the stalk is terminated by a diffuse panicle, composed of small, rounded spikes, hung on very long pedicles. The leaves are of a pale yellowish-green, the panicle of a pale-brown. Ray calls this species, *Gramen avenaceum dumetorum panicula sparsa*; C. Bauhine, *Festuca graminea latifolia mollis*.

3. *Bromus paniculae ramis conjugato-binatis.*
The Bromus, with conjugate-double branches in the panicle.

The root of this species is a tuft of white fibres: from this rise six or eight leaves, eight inches long, a third of an inch broad, and striated; among these rises the stalk: it grows to a foot and a half high, and has four or five joints, at each of which there stands a single leaf: this is a foot long, and more than a third of an inch broad; it surrounds the stalk at the base, and is not at all hairy. At the top of the stalk stands a lax panicle, composed of conjugate, little spikes, with very long and capillary awns.

This species is found about London. Ray calls it, *Gramen avenaceum glabrum paniculae spiculis raris, strigosis, compositis, aristis tenuissimis*.

FESTUCA.

THE calyx of the Festuca is a glume, containing several flowers. It is composed of two valves, and is erect, and the flowers are arranged in it in a slender spike: the valves are of an oblong linear figure, acuminate, and without awns; the lower valve is smaller than the upper: the corolla consists also of two valves; the lower valve is the larger, and of the shape of the cup, and somewhat exceeds it in size; it is of a kind of cylindric figure, but pointed at the end, and is terminated by a strait arista, or awn. The stamina are three capillary filaments, shorter than the flower. The antheræ are oblong; the germen of the pistil is turbinate: the styles are two in number, short and reflex: the stigmata are simple; the corolla serves in the place of a pericarpium, surrounding and inclosing the seed: the seed is single, of an oblong figure, very thin, very sharp-pointed at each end, and marked with a longitudinal furrow.

This genus comprehends the Festuca of Dillenius, and the Bromoides of Scheukzer; it is very nearly allied to the last; the terminatory arista is the great distinction.

1. *Festuca panicula spicata, nutante, calycibus minutissimis muticis, floribus scabris.*

The spike-panicled Festuca, with a bending head, and scabrous flowers. Capon's-Tail Grass.

The root of this species consists of a number of small, reddish fibres. From these arises a cluster of small leaves, two or three inches in length, very narrow, pointed at the ends, and usually of a reddish, or brownish, colour: among these rise two or three stalks from each root; they are six or eight inches long, very slender, and jointed: at every joint stands a single leaf, surrounding the stalk at its base, narrow, short, and pointed; on the top of every stalk there stands a panicle, in form of a spike, six inches long, not half an inch broad, and bending with its own weight: this is of a green, or brownish, colour.

The plant is common on old walls, and flowers in June and July. Ray calls it, *Gramen murorum spica longissima*; others, *Gramen alcyonurus*.

2. *Festuca*

2. *Festuca panicula erecta, spiculis subovatis muticis, calyce spiculis majore.*
The erect-panicled Festuca, with subovate spikes, and the cups larger than the flowers.

The root of this species is composed of a few fibres: the leaves, which rise immediately from it, are short, somewhat broad, and hairy. The stalks are a foot long, often less; they are very weak, and do not stand erect, but usually bend to the ground: they have three or four joints, and at each joint a single short leaf, encompassing the stalk at the base. At the top stands a small panicle, formed of oval, turgid, little spikes, and those supported on rigid, and not very long, pedicles, so that they stand firm and erect.

This species is very frequent, in our meadows and pastures, in June. Ray calls it, *Gramen avenaceum parvum, procumbens paniculis non aristatis*; Scheuckzer, *Gramen avenaceum montanum locustis muticis tumentibus pilosum*.

3. *Festuca spiculis viviparis.*
The Festuca with viviparous spikes.

**Proliferous
Oat Grass.**

The root of this species consists only of three or four short white fibres; from this rise ten or twelve leaves, very narrow, sharp-pointed, and about four inches in length: among these there comes up a stalk, which grows to about ten inches high; it has three or four joints, and, at each, a short, pointed leaf, surrounding the stalk at the base; at the top stands a short panicle, slender, and resembling a spike. It is about an inch and a half long, a third of an inch in diameter, and, before the seeds are ripe in it, there grow blades of grass, or young plants, from almost every flower.

This is frequent on the Welch mountains; I also found it in Mr Aprece's park at Wasingley. Ray calls it, *Gramen spicatum montanum, spica foliacea graminea*; Scheuckzer, *Gramen sparteum Alpinum, panicula spadiceo viridi uno plerumque versu disposita*.

A V E N A.

THE calyx of the *Avena* is a glume, composed of two valves, and containing several flowers, arranged laxly together; the valves are lanceolated, acute, and bellied, large, and without awns. The corolla consists of two valves; the lower valve is of the size of the cup, and harder, rounded, bellied, and pointed at each extremity; and, from it's back, there grows a single, crooked, and, as it were, jointed, contorted, arista or awn. The nectaria are two; they are of an ovate, lanceolate figure, and grow on the upper side of the germen. The stamina are three capillary filaments: the antheræ are oblong and bifurcated: the germen of the pistil is obtuse: the styles are two, reflex and hairy: the stigmata are simple: the corolla serves in the office of a pericarpium, surrounding and inclosing the seed, which is single, of an oblong figure, very sharp-pointed at each end, and has a longitudinal furrow.

The flowers in the cup are sometimes two, sometimes more, and there is one species whose calyx consists of a single valve. The arista at the back of the corolla, which is jointed and intorted, constitutes the essential character.

This genus comprehends the *Avena* of Tournefort, &c. and the *Avenacea* of Scheuckzer, &c.

1. *Avena calycibus dispermis, seminibus lævibus.* **Common**
The Oat, with two smooth seeds in each calyx. **Oat.**

The root of this species consists of a great number of fibres. The stalks are round, and four feet high; they have each four or five joints, and have a grassy leaf or two at the base: at every joint there stands a single leaf, long and narrow, and forming a vagina round the stalk at it's bottom. At the top of the stalk stands a panicle, somewhat like that of the common reed, the flowers standing on long pedicles.

This species is sown in fields. C. Bauhine calls it, *Avena vulgaris*; J. Bauhine, *Avena alba*: these, and some other authors, erroneously make another species, from a variety of this, which they call, *Avena nigra*.

H h h

2. *Avena*

2. *Avena panicula laxa, calycibus trifloris brevibus, floribus omnibus aristatis.*
The lax-panicled Oat, with three flowers in a cup, all of them cristated.

The root of this species consists of a few fibres: the stalk rises to two feet in height, and is slender, geniculated, and somewhat hairy. The leaves are narrow, five or six inches long, and hairy on both sides. The top of the stalk supports a short panicle, of a yellowish colour, diffuse, but not bending, its several parts being supported on very rigid and firm pedicles.

It is common, in our meadows and pastures, in June. Ray calls it, *Gramen avenaceum pratense elatius, panicula flavescente locustis parvis.*

3. *Avena calycibus bifloris, flosculo hermaphrodito mutico, masculo aristato.*
The Avena with two flowers in the calyx, and with aristated male flowers, and naked hermaphrodite ones.

The root of this species consists of a long series or string of hulbs, or tuberous bodies, laid one over another, and furnished with a great number of fibres; the taste is slightly acid: from this arise ten or twelve leaves, moderately broad, but not hairy, though rough, if the hand be drawn from the point toward the base. The stalk rises to three feet, or more, in height, and has four or five joints, at each of which there stands a single leaf, which forms a vagina round it, reaching almost up to the next joint; when it separates from this, it is four inches long, and very broad. The top of the stalk supports a panicle six inches long, and diffuse: the pedicles which support it are slender, and the spiculae are often nutant, often all turned to one side. The glumes are very beautiful, of a mixt purplish and silvery white.

We have this species among corn, and in our fields and hedges. C. Bauhine calls it, *Gramen nodosum avenacea panicula*; J. Bauhine, *Gramen nodosum*; Gerard, *Gramen caninum nodosum*.

ARUNDO.

THE calyx of the Arundo is a glume, formed of two oblong, acuminate valves, not aristated, one longer than the other; it is erect, and contains, in some species, one; in others, several flowers. The corolla is formed of two valves; they are of the length of the cup, of an oblong, acuminate figure, and have, at their base, a lanuginous matter, of the length of the flower. The stamina are three capillary filaments: the antherae are bifurcated at each end: the germen of the pistil is oblong: the styles are two; they are capillary, reflex, and hairy; the stigmata are simple: the corolla adheres to the seed, and serves as a pericarpium: the seed is single, oblong, pointed, and downy at the base.

1. *Arundo panicula laxa, flosculis quinis.* **Common**
The lax-panicled Reed, with five flowers in a cup. **Reed.**

The root of this species is creeping; it is long, thick, contorted, and knotty, of a whitish colour, with some cast of red; it is very hard and woody, and spreads a long way under the ground: its young shoots are sweet and esculent. The stalk is six or seven feet high, of the thickness of a man's little finger, jointed and hollow: from every joint of the stalk grows a single leaf, which surrounds it at its base, and grows from it to a foot, or more, in length, and is striated, about two inches in breadth, and rigid to the touch. At the top of the stalk stands a beautiful, large, diffuse, purplish panicle, which, by degrees, becomes more and more pappose, or downy, and of a paler colour, and finally is of a greyish-brown. It is composed of a multitude of parts, and those affixed to slender pedicles, so that it plays about in a beautiful manner in the wind.

This species is common about ponds, ditches, and rivers. Authors call it, *Arundo vulgaris, Arundo vallatoria, and Phragmites.*

2. *Arundo culmo ramofo.*
The branched-stalked Arundo.

The root of this species is composed of a great number of short, but thick, fibres: from this rise ten or twelve leaves, hard and rigid to the touch, five or six inches long, and striated, narrow, and terminating in a sharp point. In the midst of these rises a stalk, two feet, or more, in height, firm, rigid, and dry; it has about three joints, and at each a leaf, like the radical ones, but surrounding the stalk a great way at its base. At the top stands a panicle, large, diffuse, and composed of long spikes, of a purplish colour at first, but growing downy, white, and shining, as they ripen.

This species is not frequent in England; I met with it, however, in the borders of some corn-fields about Walthingley. C. Bauhine calls it, *Græmen arundinaceum panicula spadicea molli majus*; others, *Græmen tomentosum*.

3. *Arundo foliorum lateribus convolutis, acumine pungente.*
The rounded-leaved Arundo, with pungent points.

The root of this species consists of a cluster of fibres: from this rise ten or a dozen leaves, a foot and a half in length, and about a third of an inch in breadth at first, but their sides soon curl in, and render them very narrow and rounded, but sharp at the end. Among these rises a stalk, scarce so high as the leaves, and composed of two or three joints; at every joint stands a leaf, like those at the root, but shorter, and surrounding the stalk a little at the base. At the top stands a panicle, four inches long, and not half an inch wide, resembling a spike; it is smallest at the ends, and somewhat thickest in the middle.

This species is common on our sea-coasts, where its leaves prick people's legs, and will fetch blood. C. Bauhine calls it, *Græmen sparteum spicatum foliis mucronatis longioribus*; and Scheukzer, *Græmen sparteum spicatum maritimum spica longiore*.

L O L I U M.

THE calyx of the Lolium is a glume, containing several flowers, and consisting of a single valve, oblong, linear, acuminate, somewhat rigid, and containing the flowers, arranged in distichous spikes, placed close to the stalks. The corolla consists of two valves; the lower is narrow, lanceolated, convoluted, acuminate, and of the length of the cup; the other is short, linear, obtuse, and hollowed upwards. The stamina are three capillary filaments, shorter than the flower: the antheræ are oblong: the germen of the pistil is turbinate; the styles are two, capillary and reflex: the stigmata are plumose: there is no pericarpium. The corolla incloses the seed, which is single, oblong, compressed, convex on one side, and plane and sulcated in the middle on the other.

This genus comprehends the Lolium and Loliacea of Scheuckzer and others. The spikes are always sessile, and placed in the same plane with the stalk, so that the stalk itself performs the office of the opposite and deficient valve of the glume.

1. *Lolium spicis aristatis, radice annua.* White
The aristated-spiked Lolium, with an annual root. Darnel.

The root of this species consists of a multitude of fibres, with numerous capillaments issuing from them. From this rises a cluster of leaves, considerably long, narrow, and of a shining green colour, somewhat thick and sharp at the points: among these rises the stalk, which is two or three feet high, much resembling the stalk of wheat, but that it is thinner: it has four or five joints, and, at every joint, a leaf, like those at the bottom, but smaller and shorter; these surround the stalk from the joint they arise at, almost to the next, and terminate in a point. The stalk terminates in a spike of a foot in length, though but very narrow and flat, formed of alternate glumes, on the two opposite sides of the stalk.

This species is very common in our corn-fields. C. Bauhine calls it, *Græmen loliaceum spica longiore*; others, *Lolium vulgare*, and *Lolium album*.

2. *Lolium*

2. *Lolium spicis muticis, radice perenni.*
The naked-spiked Darnel, with a perennial root.

Red Darnel.

The root of this species is long and creeping, of the thickness of a crow-quill, and jointed, sending out many fibres from the joints: from the opposite side of these joints arise also clusters of leaves, five or six inches long, very narrow, of a deep green colour, thick and flattish; among these rises a stalk round, jointed, and a foot, or more, in height: from the lower joints of this there also frequently arise other secondary stalks. At every joint of these stands a single leaf, surrounding the stalk at the bottom, very like the radical leaves, but narrower and shorter: at the top stands a thin, flat spike, four or five inches long, and usually of a reddish colour, and composed of alternate glumes.

This species is common by way-sides. C. Bauhine calls it, *Gramen loliaceum angustiore folio et spica*; others, *Lolium rubrum*.

TRITICUM.

THE calyx of the Triticum is a glume composed of two valves, and usually containing three flowers: the valves are of an ovated figure, and obtuse. The corolla consists of two valves, nearly equal in size, and of the bigness of those of the cup. The exterior valve is bellied with an obtuse end, terminated by a point; the interior valve is plane. The stamina are three capillary filaments; the anthers are oblong, and bifurcated; the germen of the pistil is turbinate: the styles are two; they are capillary and reflex; the stigmata are plumose. The corolla serves in the place of the pericarpium, inclosing the seed, which is single, oblong, obtuse, and furrowed on one side.

This genus comprehends the Triticum and the Triticea of Scheuckzer, Pontedera, &c.

1. *Triticum radice annua, glumis ventricosis, levibus, imbricatis, submuticis.*

The annual, bellied-glumed Triticum, with imbricated glumes without awns. Wheat.

The root of this species consists of a great number of fibres, slender, but moderately long; from this arise first a number of long, narrow, and thin leaves, of a pale green; afterwards several stalks, which are tall, large, hollow, and jointed. At every joint stands a single leaf, which surrounds the stalk a long way, and, when it leaves it, is like the radical leaves. At the top stands a long and thick spike, surrounded with short and scarce sensible awns. The seeds are sometimes white, sometimes reddish, and are much larger or smaller, according to the culture and nature of the soil.

This is sown every-where in our fields, and is properly a biennial plant. C. Bauhine calls it, *Triticum biennium aristis carens*, Lobel, *Siligo spica mutica*. Starch is principally made from this wheat.

2. *Triticum calycibus truncatis quadrifloris, flosculis aristatis hermaphroditis, intermedio neutro.*

The truncated cup four-flowered Triticum, with various flowers. Spelt Corn.

This plant, in its general appearance, much resembles the common wheat. Its root consists of a cluster of moderately thick, and not very long, fibres; from this arise first a number of long and narrow leaves, very thin, and of a pale green; among these afterwards rise several stalks, hollow, jointed, slender, and about three feet high. At every joint stands a leaf, which surrounds the stalk, for a great way, at the base, and, after it leaves it, grows to five or six inches in length; at the top of the stalk stands a spike, five or six inches long, and somewhat compressed. The valves of the corolla stick so close about the seed, that they are very difficultly separated; but, when the seed is cleared from them, it is scarce distinguishable from wheat.

This species is cultivated in fields in some places, and is a biennial. C. Bauhine calls it, *Zea dicoccos* five *Zea major*, others, *Spelta*.

3. Triticum

3. *Triticum radice repente foliis viridibus.*
The green-leaved Triticum, with a creeping root.

**Couch
Grass.**

The root of this species is composed of several long ramifications, of the thickness of a crow-quill, white and sweet to the taste. These spread several ways under the surface of the ground, and terminate in sharp, hard, and pungent shoots. From the several parts of this root arise clusters of leaves; they are long, narrow, and of a pale green; among these rise the stalks; they grow to three or four feet high, and have each four or five joints: at every joint stands a single leaf, which surrounds the stalk almost to the next joint, and, when it separates from it, grows to six or eight inches in length, and generally droops downward. At the top of the stalk stands a spike like that of wheat, but much thinner, reddish in colour, and surrounded with a set of short awns.

This species is frequent in our fields, and under hedges. Its root is the grass-root used in medicine; it is diuretic and attenuant. C. Bauhine calls the plant, *Gramen caninum arvense* five *gramen Dioecoris*; others, *Gramen caninum*.

SECALE.

THE calyx of the Secale is an involucre, composed of two leaves, and containing two flowers. The leaves stand opposite, and are erect, linear, and acuminate, and are smaller than the corolla: the corolla consists of two valves: the exterior valve is rigid, ventricose, acuminate, and compressed; its lower edge is ciliated, and it terminates in a long awn: the interior valve is lanceolate and plane. The nectaria are two in number; they are ovate and erect: the stamina are three capillary filaments, hanging out of the flower: the anthers are oblong and furcated. The germs of the pistil are turbinate: the styles are two, reflex and villose; the stigmata are simple. The corolla serves the office of a pericarpium, inclosing the seed, and, at a proper time, opening and dropping it out. The seed is single, oblong, and almost cylindrical in figure.

This genus comprehends the Secale and the Secalina of Scheueker, &c. In some species the flowers are all hermaphroditic; in others there are some of them only males: and often there are two sessile flowers, with a third fixed on a pedicle between them.

1. *Secale glumarum ciliis scabris.*
The Secale, with rough cilia.

Rye.

The root of this species consists of a cluster of fibres, long, slender, and variously implicated, and interwoven with one another; from these rise a number of long, narrow, and pointed leaves, thin and reddish at their first appearance, but afterwards green, and longer and narrower than those of wheat. Among these there rise several stalks, seldom less than six or seven from the same root, often many more. These rise to five feet high; they are thinner than those of wheat, but more rigid and firm. They rise out of a gramineous vagina, and have each four or five joints, and at every joint a single, long, and narrow leaf, surrounding the stalk a long way at the base, and growing to some length from it: the spike is long, and moderately thick, and has short but rigid awns. The seed is longer and thioner than wheat, and of a blackish colour.

This species is sown in our fields. C. Bauhine calls it, *Secale hybernum*, and *Secale vernum*, from the different times of sowing it; and adds, majus to the former, and minus to the latter; but they are not distinct species.

2. *Secale spiculis geminatis.*
The double-spiked Secale.

**Sheep Dog's
Grass.**

The root of this species is composed of several ramifications, of the thickness of a crow-quill, and of a foot, or more, in length, which creep in various directions under the surface: from these, in several parts, arise tufts of leaves, thirty, or more, together:

together: these are six or eight inches long, a third of an inch broad, and of a bluish green colour, while fresh; but, as they begin to decay and dry up, their edges turn in, and they grow roundish, and of a whitish colour; and this is the state they are most frequently seen in: amongst these rises the stalk, which is slender, and grows to two or three feet high. It is firm and rigid, and has about four joints, at each of which stands a single leaf like the radical ones, and surrounding the stalk to some distance at the base. At the top of the stalk stands a spike or ear, very like that of wheat, but not so thick, though equal to it in length.

This species is common about the sea-shores in England. Ray calls it, *Gramen caninum maritimum spica triticea*. Tournefort, *Gramen loliacum radice repente maritimum*; and Van Royen, *Triticum foliis acuminatis pungentibus*.

HORDEUM.

THE calyx of the *Hordeum* is a partial involucre, composed of six leaves, and containing three flowers: the leaves are erect, linear, acuminate, and two of them are placed under every flower; there is no glume. The corolla consists of two valves; the inferior valve is angular, of an ovate-acuminated figure, belled, and longer than the cup, and terminates in a very long arista: the interior valve is lanceolated, plane, and smaller. The stamina are three capillary filaments, shorter than the flower: the anthers are oblong; the germen of the pistil is of a turbinate, oval figure: the styles are two in number, and are reflex and hairy; the stigmata are similar. The corolla serves as a pericarpium, surrounding the seed, and not letting it out: The seed is oblong, ventricose, angulated, pointed at each end, and marked with a longitudinal furrow.

This genus comprehends the *Hordeum* and the *Gramen fecalinum* of Ray.

In some of the species, contained in the common cup, are hermaphrodite and fertile; in others the two lateral flowers are only males, and the intermediate one hermaphrodite.

1. *Hordeum slosculis lateralibus masculis, muticis, angularibus imbricatis.*

The *Hordeum*, with the lateral flowers male and naked, the angular ones imbricated.

Barley.

The root of this species is composed of a cluster of small, white, and long fibres; from this rise ten or twelve leaves, long, narrow, of a pale green, and very thin, very like those of wheat, but somewhat narrower; among these rise the stalks: they grow to two feet, or more, in height, but not nearly so high as those of wheat: they are hollow, but very firm, and have usually about six joints; at each joint stands a single leaf, which is nearly as broad as the wheat-leaf, and at the bottom surrounds the stalk to some distance from the joint. At the top stands a spike or ear, about four inches long, and half an inch thick, and every way surrounded with very long awns or awns.

This species is sown in our fields. C. Bauhine calls it, *Hordeum distichum*; and most other writers use the same name.

2. *Hordeum slosculis lateralibus masculis, aristatis.*

The *Hordeum*, with the lateral flowers, male and aristated.

Rye

Grass.

The root of this species is composed of a great number of slender, white fibres, variously interwoven with one another. From this rise several oblong, grassy leaves; they are four or five inches long, a third of an inch broad, and pointed at the end, of a pale green colour, and somewhat rigid to the touch. Among these rises the stalk; it seldom exceeds five or six inches in height, and is often oblique, rather than erect: it has three or four joints, and at each a single leaf, surrounding it almost to the next joint. At its top stands a long spike or ear, very much resembling an ear of barley, and furnished with awns as long and frequent.

This species is very frequent by way-sides, and in barren places, often on walls. It was long called barley-grass; of late it has been called rye-grass, but Linnæus has properly

perly referred it to the barleys again. C. Bauhine calls it, *Gramen Hordeaceum minus* et vulgare. Ray, *Gramen fœcalinum et fœcale sylvestre*.

E L Y M U S.

THE calyx is a common involucre, containing several flowers in two spikelets, placed near one another on the same denticle of the spike. It consists of four leaves, which are erect, acute, and narrow. The corolla is composed of two valves: the stamina are three short and slender filaments; the antheræ are oblong. The germen is oval; the styles are two, and their stigmata simple. The seed is oblong.

1. *Elymus spica flaccido-pendula.*

The Elymus, with a flaccido-pendulous spike.

The root of this species is composed of a cluster of moderately thick fibres; from this arise eight or ten leaves; they are ten inches long, and more than half an inch broad, of a pale green colour, striated and rough to the touch, both on the upper and under surfaces, if the hand be drawn backward over them. Among these rise several stalks; they are hollow, jointed, round, and grow to two or three feet in height; at each joint stands a single leaf, surrounding the stalk a great way at the base, in form of a vagina; and, when it separates from it, of the form of the radical leaves. At the top of the stalk stands a spike of six or seven inches long, and of a lax structure, not erect, but bending; the stalk itself between the spikelets being compressed and very thin, and thence too feeble to support itself upright. It is composed of two rows of these little spikes, and furnished with very long awns.

This species is a native of Siberia. Gmelin calls it, *Triticum radice perenni spiculis binis longissimè aristatis*.

2. *Elymus aristis spicula longioribus, involucri magnis.*

The Elymus, with very large involucre, and with awns longer than the spicula.

The root of this species is composed of a number of oblong ramifications, creeping under the surface of the earth. From the several joints of these arise clusters of leaves six or eight inches long, not very broad, and terminating in a point. Among these rises a stalk a foot, or more, in height, round, jointed, of a pale green colour, and hollow. At every joint of this stands a leaf, surrounding it at the base, and growing to a considerable length from it: at the top stands a spike, three inches in length, and moderately thick, composed of a double series of short spikelets; the flowers are small, the involucre larger and thicker, and the whole spike covered with awns or awns.

This species is a native of Virginia, and many other parts of North America, and is called by Gronovius, *Hordeum flosculis omnibus hermaphroditi, involucri flosculos crassitie et longitudine superantibus*.

Class the Third. Order the Third.

TRIANDRIA TRIGYNIA.

Plants which have in every flower three stamina, and three styles.

ERIOCAULON.

THE calyx of the *Eriocaulon* is a common perianthium, of a globose, depressed form; imbricated, and formed of permanent squamæ, of an equal size, and lanceolated shape. The general corolla is uniform and convex: the proper corolla is formed of three petals of a lanceolated figure, obtuse, hairy at the top, and small at the base, where they coalesce and form a hairy styliform body. The stamina are three capillary filaments growing on the germen: the antheræ are oblong and versatile. The germen is slender, and placed within the corolla, under the stamina. The styles are three

three in number, short and capillary: the stigmata are simple. There is no pericarpium. The calyx remains unaltered, and contains the seed, which is single.

Of this there is only one known species.

ERIOCAULON.

The root is fibrous; the radical leaves are two or three inches long, very narrow and grassy of a pale green colour, and spread circularly on the ground. The stalks are very slender, round, naked, six or eight inches high, and are covered with a blackish, glossy hairiness: on their tops stand small, round, or oval, clusters of whitish or reddish flowers.

It is a native of North America, and grows principally about the sea-side. Petiver calls it, *Planta marina capitulis albis conglobatis*.

MONTIA.

THE calyx of the Montia is a perianthium composed of two leaves, concave, of an oval, obtuse figure, erect and permanent. The corolla consists of a single petal, and is divided at the extremity into five parts; three of the segments are smaller than the others, and produce stamina; these stand alternately with the two larger. The stamina are three capillary filaments, of the length of the corolla, into which they are inserted. The antheræ are small: the germen of the pistil is turbinated. The styles are three in number, villose and patent; the stigmata are simple. The fruit is a turbinated, obtuse capsule, covered by the cup, composed of three valves, and having three cells. The seeds are three in number, and roundish. This genus comprehends the *Cameraria* of Dillenius, and the *Alfinoides* of Vaillant. The calyx often varies, and is composed of three leaves; and in this case the flower has five stamina.

Of this genus there is only one known species. Micheli makes two, but erroneously, from a variety of this.

MONTIA.

Blinks.

The root of this plant consists of a great number of fine, capillary, white fibres; from this rise several stalks, round, of a reddish colour, procumbent, and often sending forth new roots at the joints, as they lie on the ground. They are often not an inch long, seldom much more than two, knotty, and often much branched. The leaves stand two at each joint; they are small, like those of the *serpyllum*, but narrower, of a pale green, and somewhat fattish. The flowers grow from the axæ of the leaves principally about the top of the plant, sometimes all the way along it: they stand on peduncles half an inch in length, though sometimes singly, sometimes two or three together. They are extremely small, and seldom quite open; they are white. The taste of the whole plant is bitter.

It is frequent with us in damp places; sometimes, in rainy seasons, in corn-fields. C. Bauhine calls it, *Portulaca arvensis*. Dillenius, *Cameraria arvensis minor*. Vaillant, *Alfinoides annua verna*; and Ray, *Alfine parva palustris, tricoccus, portulacæ aquaticæ similis*.

PROSERPINACA.

THE calyx is a perianthium, composed of a single leaf, divided at the extremities into three narrow, pointed segments. There is no corolla. The stamina are three slender filaments: the antheræ are moderately large, and oblong; the germen is oval, and stands beneath the cup; the styles are three, and slender; the stigmata are small; the seed is single.

There is but one known species of this genus, and that so sufficiently distinguished by these characters, that it needs no farther description.

TILLÆA.

TILLÆA.

THE calyx of the Tillæa is a plain perianthium, consisting of a single leaf, divided into three large, oval segments. The corolla consists of three oval, acute, plane petals, somewhat smaller than the segments of the cup. The stamina are three simple filaments, shorter than the corolla: the antheræ are small. The germina of the pistil are three in number: the styles are simple; the stigmata are obtuse. The fruit consists of three oblong, acuminate capsules, reflex, and of the length of the flower, which, when ripe, split open longitudinally upwards. The seeds are of an oval figure, and are contained two in each capsule.

Micheli first distinguished this plant to be a distinct genus. There is only one species of it, and that Vaillant calls a species of Sedum.

TILLÆA.

The root is small, white, woody, and divaricated into two or three parts. The radical leaves are, of an oval figure, and about a tenth of an inch long, somewhat thick, and of a dusky green; the stalk is about an inch and half in length, round, slender, and furnished with a number of leaves, standing in pairs, of the shape of the radical ones, but smaller, and without any pedicles. Sometimes the stalk is simple; sometimes there grow branches from the axis of all the leaves. The flowers are very minute; the seeds oval.

It grows out of the cracks of rocks in Italy and Spain. Bocconi calls it, *Sempervivum, omnium minimum, repens, muscosum polygoni facie*; and, in another place, *Polygonum muscosum minimum*.

MOLLUGO.

THE calyx of the Mollugo is a perianthium, composed of five leaves, which are permanent, oblong, coloured on the inside, and erecto-patulous in their situation. There is no corolla, except the calyx be called by that name. The stamina are three setaceous filaments, shorter than the flower, and placed very near the pistil: the antheræ are simple. The germin of the pistil is oval and trifoliate: the styles are three in number, and very short: the stigmata are obtuse. The fruit is a capsule of a somewhat oval figure, formed of three valves, and containing three cells, in each of which there are a number of kidney-shaped seeds.

There is only one known plant of this genus, and that is called, in the Hort. Lugd. Batavus, a species of *Aline*.

MOLLUGO.

The root of this plant consists of a number of white, moderately thick, and long fibres. The stalk is slender and round; it lies close upon the ground, and is divided into a multitude of branches, in a dichotomous order. It is jointed, and between the joints somewhat striated; and at the joints is larger than elsewhere, and of a red colour. At every joint of the stalk there stands a cluster of leaves, usually five, sometimes seven. They are disposed in a radiated manner, and are of a lanceolate figure, somewhat cruciform, and pointed at the extremities, and are smooth and hollowed. The flowers stand in circles round the stalk, each on its own pedicle, which are shorter than those of the leaves, and very slender. The calyx is oblong, green on the outside, and within. The seeds are striated, and of a reddish-brown colour.

This plant is a native of Virginia, and some other parts of North America. Gronovius calls it, *Mollugo foliis sepius septenis lanceolatis*. Plukenet, *Aline spergula marina latiori folio, floribus ad nodos pediculis curtis circa caulem infidentibus, calycibus punctatis*.

Class the Fourth.

TETRANDRIA.

Plants which have in every flower four stamina.

OF the Tetrandria, some have only one style in the flower, some two, and some four. They are therefore conveniently arranged into three orders: the first containing those which have four stamina, and only a single style, under the name of Tetrandria Monogynia. The second, those which have four stamina, and two styles, under the name of Tetrandria Digynia; and the third, those which have four stamina, and four styles, under that of Tetrandria Tetragynia.

Class the First. Order the First.

TERANDRIA MONOGYNIA.

Plants which have four stamina, and only one style, in every flower.

THIS order contains so great a number of genera, that it is necessary to arrange them, according to their several principal and more obvious differences, into five divisions. The *first*, containing those which have several flowers in the same common calyx, and have naked seeds. The *second*, such as have monopetalous flowers, placed on didymous fruit, with a bifid style. The *third*, those which have monopetalous flowers, without these characters. The *fourth*, those which have complex tetrapetalous flowers. The *fifth*, those which have incomplete tetrapetalous flowers.

*Class the First. Order the First.**Division the First.**Tetrandria Monogynia, which have aggregated flowers in the same common cup, and have after every flower a single, naked seed.*

LEUCODENDRON.

THE calyx of the Leucodendron is a common perianthium, of an imbricated figure, composed of unequal, permanent squamæ, very various in their figure and proportion. The general corolla is uniform and convex: the peculiar corolla is oblong, hoary on the outside, and is composed of two petals. The upper petal has a long, linear unguis, and its limb is lanceolated, undivided, and in its lower part is firmly joined to the lower petal; the lower petal has also a long unguis, of a linear figure, but three times as broad as that of the upper petal. The limb is oblong, of a semicylindric figure, and is divided into three segments. The stamina are four very short filaments, of a subulated figure; they are inserted into the limb of the corolla, one between every segment. The anthera seems single, and is erect and tubulated, of an oblong figure; it consists of four proper antheræ, which coalesce into a kind of cylindric body. The germen of the pistil is oblong, and terminates in a very long, subulated style; the stigma is simple; there is no pericarpium. The cup, scarce at all altered, serves in the place of it, containing in its cavity a single, roundish seed, coronated with hairs. The receptacle is sometimes naked, and sometimes hairy, and there is one species, otherwise truly of this genus, in which the calyx is not a common one, but contains only a single flower.

This genus comprehends the *Lepidocarpodendron*, the *Hypophyllocarpodendron*, and the *Conocarpodendron* of Boerhaave; though not all the species of the last; also the *Scalymoccephalus* of others.

1. *Leucodendron foliis oblongis, latis, obtusis.**The oblong, broad, and obtuse-leaved Leucodendron.*

This is a large and tall tree. Its root is very long, thick, and branched: its trunk grows to three feet in diameter: the wood is very hard and knotty, and of a fine yellow colour: the bark is rough, and full of cracks; it is of a brownish colour, with some tinge of yellow on the trunk, but, on the young branches, it is of a fine strong purple. The branches are very numerous, and the leaves stand very thick on them, in an irregular manner; they are like those of some of our willows, oblong, broad, obtuse, of a pale green, and somewhat thick and fleshy: the middle rib is yellow, and there is usually a border of purple all round the edge: at the extremities of the branches stand the flowers. The cup is very large, and consists often of eight successive series of squamæ; these are purple on the outside, and of a greyish-yellow within: the flowers are very numerous, but small in proportion to the size of the cup. The tree grows to twenty or thirty feet high, and, when in flower, is one of the most beautiful trees in the world.

It is a native of the Cape of Good Hope. Its bark is an astringent, and is used with success by the Africans against diarrhoea. Herman calls it, *Scolymocephalus foliis oblongis, glabris, crassioribus, latioribus*. Boerhaave, *Lepidocarpodendron folio sulgno lato, caule purpurascente*.

2. *Leucodendron foliis apice trifido, glabris.**The smooth, trifid-leaved Leucodendron.*

This is a very beautiful species, as well as the former, but it does not grow to such a stature. Its root is large, woody, and branched: from this rise a number of woody shoots, which grow to three or four feet high, rarely more: the bark is of a dusky brown, smooth and glossy; the wood hard, and of a whitish colour. The leaves stand irregularly, and have no pedicles; they stand at distances from one another, and are small, narrow, and divided into three parts at the extremity; the lower ones have only this trifid top of the leaf red; the rest are red throughout, and make a very beautiful appearance. The flowers grow at the extremities of the branches, affixed to these red leaves, and make a very beautiful appearance.

This is also a native of the Cape of Good Hope. Boerhaave calls it, *Hypophyllocarpodendron foliis inferioribus apice trifido rubro, superioribus penitus rubris glabris*; Herman, *Scolymocephalus Africana foliis angustis brevioribus, trilobis in summitate*.

3. *Leucodendron foliis crassis, nervosis, lanuginosis, extremitatibus crenatis.**The Leucodendron with thick, nervous, lanuginous leaves, crenated at the top.*

The root of this species is large, woody, and branched: from this rises a very short trunk, which often grows, however, to four feet in diameter; from the head of this, which seems as if cut off, there rise a vast number of branches, which grow to a considerable length. The bark of the trunk is brown and cracked, that of the young shoots green and hairy. The leaves stand very thick together, and are rigid, nervous, very thick and hairy, crenated at the extremity, and tinged with purple at the edge. At the tops of the branches stand the flowers, among clusters of leaves; they are large, very beautiful, and of a deep yellow. The common calyx finally becomes a fruit, of a conic figure, which easily falls off.

This is, like the others, a native of the Cape of Good Hope. Herman calls it, *Leucodendron Africana foliis serratis*; and Boerhaave, *Conocarpodendron folio crasso, nervoso, lanuginoso, flore aureo, cono facile deciduo*.

The other species of the *Leucodendron* are, 1. The round-leaved kind, with large purple flowers. 2. The *Leucodendron* with hairy squamæ. 3. The narrow willow-leaved, violet-flowered *Leucodendron*. 4. The *Leucodendron* with short leaves and a variegated calyx. 5. The short-fruited *Leucodendron*. 6. The long conic-fruited *Leucodendron*. 7. The *Leucodendron* with long, narrow leaves surrounding the fruit. 8. The small-fruited, herbaceous *Leucodendron*. 9. The variegated, cupped, herbaceous, and procumbent *Leucodendron*. 10. The grassy-leaved *Leucodendron*. 11. The *Leucodendron* with short, clustered, silky leaves. 12. The round, rigid-leaved

leaved *Leucodendron*, with a long, variegated fruit: and, 13. The *Leucodendron* with leaves deeply serrated at their extremities.

PROTEA.

THE calyx of the *Protea* is a common perianthium, of a roundish figure, and imbricated structure, formed of squammæ of a somewhat oval shape. The universal corolla is uniform, and is a little longer than the cup: the peculiar corolla is monopetalous: its tube is of the length of the cup: its limb is divided into four segments, and is smooth, patent, equal, and of the length of the tube. The stamina are four setaceous filaments, and are longer than the flower: the antheræ are incumbent: the germen of the pistil is of a roundish figure: the style is setaceous and erect: the length of it is the same with that of the stamina: the stigma is obtuse. There is no pericarpium: the calyx remains unaltered, and contains the seeds, which are single, roundish, and naked: the receptacle is of a conic figure, and separated by paleæ. Boerhaave describes this genus under the name of *Conocarpodendron*; Tournefort, after Plukenet, calls it *Leucodendros*; and Commelin, *Argyrodendros*: Ray, *Conophoros*.

1. *Protea foliis angustis rigidis, apicibus integris.*

The narrow, rigid-leaved Protea, with undivided extremities.

The root of this species is composed of a number of thick and variously extended ramifications. The trunk rises single, four inches in diameter, and covered with a yellowish bark, rough and full of cracks. From the trunk there rise a number of branches, robust and thick, and variously divided into others: in the whole it grows to about eight feet high. The leaves stand irregularly, and not thick together; they are long, narrow, and much resemble those of the common willow, but that they are rigid to the touch: they are of a blue-green colour, but the middle rib is yellow. There grow clusters of leaves at the extremities of the branches, which form a kind of circular congeries, from the center of which rises a conic head, of the bigness of a cone of the larch, containing the flowers, which are very small, and of which scarcely any thing but the stamina appear.

This species is frequent about the Cape of Good Hope: Sherard, in Ray's History, calls it, *Scolymcephalus oleæ folio*. Boerhaave, *Conocarpodendron folio rigido, crasso, angusto, cono larchis parvo*.

2. *Protea foliis angustis rigidis, apicibus tridentatis.*

The Protea with narrow, rigid leaves, tridentated at the extremities.

The root of this species is composed of a number of creeping, very long, and slender ramifications. The stem is procumbent, and does not rise single, but usually several together: from the main stalk there proceed a great number of branches, all long and weak, so that they also, in part, trail upon the ground. The leaves stand irregularly on these; they have scarce any pedicles; they are oblong, and are very narrow at the base, from whence they gradually become wider to the extremity, where they are considerably broad and obtuse, but terminated by a tridentated apex: this part is red, the rest of a pale green. At several different parts of the branches, among the leaves, grow the cones; they are small and squamose, purplish toward the summit, and yellowish toward the base. The flowers are small and yellow; they every-where surround the surface of the cone.

This species grows abundantly in many parts of Africa. Herman calls it, *Scolymcephalus humilis, foliis in apice tridentatis*. Boerhaave, *Conocarpodendron folio rigido angusto, apice tridentate rubro, flore aureo*.

3. *Protea foliis angustis brevibus.*

The short and narrow-leaved Protea.

The root of this species is composed of a number of large ramifications, running under the surface of the ground. The whole shrub rarely exceeds three or four feet in height: it rises with a thick stem, or trunk, which soon divaricates into a multitude of branches, so as to form a very beautiful tuft. The wood is green, the bark yellowish:

yellowish: the leaves are narrow and short, rigid to the touch, smooth, and of a bluish-green colour. At the extremities of the branches there stand clusters of yellowish leaves, in a circular order, which form a kind of calyx, from the center of which rises the cone, which is small, squamose, and variegated with red and yellow: the base of the cone is it's extremity; it adheres by the apex: the flowers are very small, the seeds blackish.

This species is frequent on the rocky mountains of Africa. Herman calls it, *Scolymocephalus Africana foliis brevibus*. Boerhaave, *Conocarpodendron folio angusto rigido breviori*, *cono parvo aureo corona foliacea cincto*.

The other species of the Protea are, 1. The broad, silvery-leaved Protea, called the Atlas-tree. 2. The roundish-leaved Protea. 3. The very long and narrow-leaved Protea: and, 4. The very narrow and thin-leaved water Protea. Boerhaave has described several other species of the *Conocarpodendron*, but they belong to the former genus, not this.

CEPHALANTHUS.

THE calyx of the *Cephalanthus* consists of a common perianthium, which contains several flowers, collected into a kind of head, and of a proper perianthium, which is erect, permanent, and divided into four segments. The corolla consists of a single petal: the tube is slender: the limb is divided into four parts, acute, reflex, and of the length of the tube. The stamina are four filaments, inserted into the corolla, and shorter than it's limb; the antheræ are simple: the germen of the pistil is placed within the flower: the style and the stigma are both simple. The fruit is an oblong capsule, containing only one cell: several of these grow together, and form a roundish head. The seeds are numerous, and oblong: the flower has it's limb sometimes divided into five segments; instead of four, and then the proper perianthium has also five segments, and there are five stamina.

Vaillant and Van Rheede call this genus, *Platanocephalus*; Petiver, *Valerianoides*.

1. *Cephalanthus foliis oppositis ternatisque.*

The Cephalanthus, with opposite and ternate leaves.

The root of this species consists of a number of ramifications, spreading various ways under the surface. The stem is firm and woody, and grows to a considerable size: the branches grow to a considerable length: the bark is green; the wood reddish, with some yellowish circles, and a greenish heart: the leaves are oblong and broad; they are of a bright green, narrow at the base, and terminate in a point at the extremity: they stand usually three together, surrounding the stalks; they are somewhat rough to the touch, and of a bitter taste. The flowers grow in clusters, at the tops of the branches, and are of a yellowish colour.

This species is a native of North America; we have it in some of our greenhouses. Vaillant calls it, *Platanocephalus foliis ex adverso ternis*; Petiver, *Valerianoides Americana flore globoso, folio pinnatis*; Plukenet, *Scabiola dendroides Americana ternis foliis*.

GLOBULARIA.

THE common perianthium of the *Globularia* is imbricated, and of the length of the stamules: the proper perianthium is formed of a single leaf, tubulated, and divided into five segments at the extremity: the universal corolla is nearly equal: the proper corolla is formed of a single petal, tubular at the base, and divided into four segments at the edge; the upper segment is small and reflex; the three lower ones are larger, equal in size, and form a kind of lower lip. The stamina are four simple filaments, of the length of the corollula: the antheræ are distinct: the germen of the pistil is of an oval figure: the style is simple, and of the length of the stamina: the stigma is obtuse: there is no pericarpium: the proper perianthium closes at it's top, and contains the seed, which is single, and of an oval figure. The common receptacle is oblong, and divided by paleæ.

This genus comprehends the *Globularia* of Tournefort, &c. and the *Alypum* of Nissole and Dillenius.

1. *Globularia caule herbaceo, foliis radicalibus tridentatis, caulinis integerrimis.*

The herbaceous-stalked Globularia, with the radical leaves tridentated, the others intire.

The root of this species is oblong and slender, reddish on the outside, and white within, bard, woody, and furnished with a few white fibres. From this rise a number of short, and somewhat broad, leaves, thick, nervous, and smooth, and tridentated at the extremities: among these rises the stalk, usually single, but sometimes three or four grow together. It grows to five or six inches high, sometimes to more than twice that height; it is round, striated, and usually of a reddish colour, and has on it a number of leaves, not divided, like those which rise immediately from the root, but shorter, and intire. At the top of the stalk stands a roundish, or oval, head, or cluster of flowers; they are of a beautiful blue colour, small, and arranged close together.

This is not a native of England, but is frequent in France, Germany, Sweden, and many other parts of Europe. Clusius calls it, *Globularia*; C. Bauhine, *Bellis cerulea caule folioso*; Anguillara, *Aphyllanthus*.

2. *Globularia caule herbaceo nudo.*

The Globularia, with a naked, herbaceous stalk.

The root of this species consists of a cluster of white fibres, of the thickness of a small packthread. From this arises a cluster of oblong, and broad, leaves, of a dark green colour, and smooth surface: from the center of this tuft of leaves rises a single stalk, round, somewhat striated, and of eight or ten inches in height; it has no leaves on it, but is perfectly naked to the top, where there stands a roundish head, composed of a great number of flowers, of a beautiful pale blue.

This species is a native of the mountainous parts of Germany. C. Bauhine calls it, *Bellis cerulea caule nudo*. Tournefort, *Globularia Pyrenaica caule nudo*.

3. *Globularia fruticosa, foliis brevibus tridentatis.* *Alypum of*
The shrubby Globularia, with short, tridentated leaves. *Montpellier.*

This species is a small shrub; its root is thick, oblong, of a blackish colour, and very hard and woody. Its stem grows to three quarters of an inch, or more, in diameter, and divides into a number of thin, but firm and woody, branches, covered with a smooth, reddish bark; the whole shrub grows to about three feet in height. The leaves stand irregularly on the stalks, and are usually reddish; they are about three quarters of an inch in length, and are very narrow at the base, and thence grow broader to the extremity, where they are usually terminated by three points: they are thick, and very bitter to the taste. The flowers stand at the tops, and along the sides of the branches; they are collected into a kind of small beads, and are of a reddish or purplish colour.

This species is not met with native in England, but it is very frequent in Germany, Italy, and some parts of France. Authors call it, *Thymelæa* and *Alypum*. It is a violent cathartic and emetic, and is sometimes given in dropies, with success; but it is to be used with caution. Its bark contains it's principal virtues.

The other species of the *Globularia* are, 1. The little, creeping, woody-stalked *Globularia*. 2. The shrubby, African *Globularia*, with hoary, short leaves. 3. The spinose *Globularia*. 4. The little, Alpine, origanum-leaved *Globularia*: and, 5. The *Globularia*, with flowers in the axæ of the leaves.

D I P S A C U S.

THE common perianthium of the *Dipsacus* is composed of many leaves, and contains many flowers: the leaves are narrow, longer than the flowers, and permanent: the proper perianthium is scarce visible; it stands on the germen. The corolla is formed of a single petal, which is strait, tubular all the way, and divided into four segments

segments at the mouth: the exterior segment is larger than the others, and acute. The stamina are four capillary filaments, longer than the corolla: the antheræ are incumbent: the germen of the pistil stands within the proper perianthium: the style is capillary, of the length of the corolla: the stigma is simple: there is no pericarpium. The seeds are single, and of a columnar figure, and are coronated with an undivided edge: the common receptacle is conic, and formed of a spongy body, with a multitude of paleæ.

1. *Dipsacus capitulis florum copiosis.*

The conic-headed Dipsacus.

**Common
Teasel.**

The root of this species is oblong, white, thick, and furnished with several fibres. The leaves, which rise in a cluster from this, are a foot, or more, in length, and four inches in breadth, with large ribs, and some spines on them. The stalk is single; it grows to five feet high, and is whitish, round, and bollow, beset with prickles, especially toward the top. The leaves stand two at a joint, and their bases are joined, and surround the stalk in such a manner as to form a kind of boson, in which stands usually a quantity of water: these have a few serratures at their edges, and a row of hooked spines along the middle rib. Toward the top of the stalk there grow out branches in pairs; from the axæ of the leaves, and on the summits of these, as well as of the main stalk, stand the heads; they are of an obtusely conic figure, and of the size of a hen's egg: the flowers are small, and of a reddish colour.

This species is frequent with us in uncultivated places, and by road-sides. C. Bauhine calls it, *Dipsacus sylvestris aut virga pastoris major*; others, *Labrum veneris*.

2. *Dipsacus capitulis florum subglobosis.*

The round-headed Dipsacus.

**Little
Teasel.**

This is a smaller plant than the former. Its root is oblong and white, furnished with a number of fibres, and does not descend very deep into the ground: the stalk is of the thickness of a man's finger, round, hollow, greenish, and rigid on the surface, with sharp spines on the ridges; toward the top it is divided into many branches. The leaves stand in pairs on the stalk, and both these and the radical ones are very like those of the common *Dipsacus*, but smaller, and do not embrace the stalk, or form a cavity about it, as in that species: at the base of each leaf there are two auriculae: the pedicle is an inch in length, and the leaf broadest in the middle, serrated at the edges, and armed with spines on the under surface. At the tops of the stalks and branches stand round heads, of the bigness of a nutmeg, furnished with numerous, small, white flowers.

This species is frequent with us by road-sides, and in dry pastures. C. Bauhine calls it, *Dipsacus sylvestris capitulo minore, five virga pastoris*.

The other species of *Dipsacus* are, 1. The lacinated-leaved *Dipsacus*. 2. The smooth, four-leaved *Dipsacus*, with scabious-like leaves. 3. The great Indian *Dipsacus*, with clustered heads: and, 4. The jagged-leaved *Dipsacus*, with smooth, oval heads. Authors describe also what they call a *Dipsacus fativus*; but this is only the first species described here, rendered larger by culture. The heads of this kind are used in dressing cloaths, and the leaves are a good stomachic, but they are not much known as such.

SCABIOSA.

THE common perianthium of the Scabiosa is formed of many leaves, surrounding the receptacle in several series, and fixed on it; the inner ones of these are smaller than the outer; the whole is patent, and contains many flowers. The proper perianthium is double; both, however, are fixed on the germen; of these the exterior one is permanent, short, membranaceous, and plicated; the interior one is divided into five subulato-capillaceous segments. The corolla consists of a single petal; this is erect, tubulated, narrowest at the base, and thence gradually wider, and slightly divided into either four or five segments, of which the exterior ones are the larger. The stamina are four subulato-capillary, weak filaments: the antheræ are oblong and incumbent: the germen of the pistil is placed below the receptacle of the stamule, and

and is surrounded with a peculiar vagina, by way of another cup. The style is filiform, and of the length of the corolla: the stigma is obtuse, and obliquely emarginated. There is no pericarpium; but the common receptacle, which is of a convex figure, supplies the place of one: the seeds are single, and of an ovato-oblong figure, crowned with their proper calyx.

The figure in this genus is very irregular and uncertain. The exterior corollule are often larger than the others, and unequal: the coronæ of the seeds also are of various shapes. This genus comprehends the *Scabiosa* of Tournefort, &c. and the *Asteroccephalus*, *Pteroccephalus*, and *Succisa*, of Vaillant.

1. *Scabiosa corollulis quadrifidis, corollis radiatis.*

The radiated Scabious, with quadrifid flowers, and hairy stalks. **Common Scabious.**

The root of this species is single, white, and long. From this arises a cluster of oblong, hairy leaves, of a whitish-green colour: among these rise two or three stalks, which grow to near three feet high; they are round, hollow, and hairy: the leaves stand in pairs, at the joints of the stalks, which are very distant from one another; they are oblong, and variously laciniated at the edges, of a whitish-green, and very hoary. At the top of the stalk, and of the several branches, stand the flowers, in large numbers together, collected into roundish, but depressed, heads: they are usually of a beautiful blue colour, sometimes reddish.

This species is very common in our corn-fields, and in dry pastures. C. Bauhine calls it, *Scabiosa pratensis hirsutaque officinarum*; others, *Scabiosa major vulgaris*.

2. *Scabiosa corollulis quadrifidis, caule simplici, ramis approximatiss, foliis lanceolato-ovatis.*

The quadrifid-flowered Scabious, with lanceolato-ovated leaves. **Devil's-bit.**

The root of this species is of the thickness of a man's little finger, but short, and seeming as if bitten off at the extremity, from whence there issue a multitude of fibres. From this rises a cluster of leaves, oblong, broadest in the middle, of a dark green colour, and pointed at the ends, a little hairy, and, for the most part, even at the edges: among these rise the stalks; they are simple, round, and solid, not hollow, as in the common Scabious. The leaves stand in pairs, at the joints, which are very far asunder; and at the top of the main stalk and of the branches, which issue from the axils of the leaves at the sides, there stand round heads, composed of blue flowers, all of the same size.

This species is frequent with us, in meadows and pastures. C. Bauhine calls it, *Succisa glabra*; J. Bauhine, *Succisa five morsus diaboli*.

3. *Scabiosa capitulis oblongis, corollulis majusculis, foliis dissectis.*

The long-headed, large-flowered Scabious, with dissected leaves. **Musk Scabious.**

The root of this species consists of a multitude of white fibres. From this arises a cluster of oblong leaves, of a dark green colour, crenated, more or less, deeply about the edges: among these rise a great number of stalks, which grow to two or three feet high; they are very slender, and have at every joint two leaves, deeply dissected and laciniated, and not at all like those which grow immediately from the root. Toward the top of the stalk there grow a great number of branches, and, at the extremities of these, stand the heads: the flowers are of a deep blackish-purple, and smell not so much like musk as civet.

This species is a native of the East Indies, but it is very frequent in our gardens. C. Bauhine calls it, *Scabiosa peregrina capitulo oblongo nigricante, odore zibethi*.

Beside these, there are a great number of species of Scabious, and a very great number of varieties described as species. The most singular and certainly distinct are, 1. The blue-flowered, shrubby Scabious. 2. The agrimony-leaved, annual Scabious.

3. The

3. The yellow-flowered, multifid-leaved Scabious. 4. The broad-leaved, prolificus Scabious. 5. The narrow-leaved, prolificus Scabious. 6. The great, centaury-leaved Scabious. 7. The red-flowered, jagged-leaved Scabious. 8. The great, long-headed, red-flowered Scabious. 9. The round-headed, small, field scabious. 10. The great-leaved, stellate, Spanish Scabious. 11. The little, stellate Scabious, called by Columna, *Phyteuma*. 12. The shrubby Scabious, with procumbent branches. 13. The great, African, arborecent Scabious. 14. The grass-leaved Scabious. 15. The *fraxinella*-leaved Scabious. 16. The *auricula*-leaved Scabious. 17. The yellow-flowered, great, centaury-leaved Scabious. 18. The great, *scorzonera*-leaved Scabious.

The common-field Scabious, internally, is a pectoral, and it's leaves are a common ingredient in decoctions of that kind. Externally, it cures breakings out in the skin. The way of using it is boiling the juice to the consistence of an ointment with lard.

K N A U T I A.

THE common perianthium of the *Knautia* is simple, cylindric, oblong, and erect.

It contains a number of stamules, arranged into a simple, orbicular series, and is formed of a number of subulated segments, equal to that of the flowers, and placed close to one another. The proper perianthium is very small, and forms a kind of corona on the germen. The universal corolla is equal: the proper, or simple, corolla is unequal; it consists of a single petal, the tube of which is of the length of the cup, and the limb is divided into four unequal segments; the exterior one of which is larger than the rest, and of an oval figure. The stamens are four filaments, larger than the tube of the flower, and inserted in the receptacle: the antheræ are oblong and incumbent. The germen of the pistil is placed below the proper receptacle of the flower; the style is filiform, and of the length of the stamens; the stigma is somewhat thick and bifid. There is no pericarpium; it's office is performed by the common receptacle, which is plane, naked, and scarce observable. The seeds are single, of a square figure, and hairy at the top.

This genus is nearly allied to the Scabious, but differs in the calyx, being tubulated, and the flowers placed in a simple, orbicular series. Boerhaave calls it, *Lychni scabiosa*.

Of this singular genus there is only one known species.

K N A U T I A.

The root of the *Knautia* consists of a number of white fibres, variously implicated and entangled: from this rises a cluster of leaves of a pale green colour, oblong, and indented at the edges; among these grow up several stalks, round, slender, green, and hairy. The leaves stand two at every joint, and are also hairy, and of paler green than those which rise immediately from the root; at the tops of the stalk and branches stand the heads; they are not round, but compressed, and have only one row of flowers surrounding the base. These are moderately large, and of a beautiful red colour; and the whole compound flower, from their particular arrangement, has rather the appearance of that of some of the *lychnis*-kind, than of what it really is, till nearly examined.

The *Knautia* is a native of the East Indies, but it is a hardy plant, and bears the open air in some of our gardens. Boerhaave calls it, *Lychni scabiosa flore rubro annua*; and Vaillant, *Scabiosa orientalis caryophylli flore*.

Class the Fourth. Order the First.

Division the Second.

Tetrandria Monogynia, with monopetalous flowers placed on didymous fruits, and with a bifid style in the flower. This division comprehends the *Herbæ Stellatæ* of Ray, and others.

A S P E R U L A.

THE calyx of the *Asperula* is a small perianthium, placed on the germen, and consisting of a single leaf, divided into four short segments at the edge. The corolla consists of a single petal: the tube is cylindric and long, the limb is divided into four obtuse, oblong, reflex segments. The stamina are four filaments, affixed to the upper part of the tube: the anthers are simple. The germen is didymous, roundish, and situated below the cup. The style is filiform, and bifid at top: the stigmata are capitated. The fruit consists of two round, dry berries, growing to one another: the seeds are single, round, and large.

1. *Asperula foliis senis, floribus sessilibus.*
The six-leaved *Asperula*, with sessile flowers.

Blue Wood-
ruff.

The root of this species consists of a cluster of whitish fibres; the stalk is square, rigid, and thick, and grows to a foot and half in height. At every joint there stand six, or more, oblong, slender, pointed leaves, of a dusky green colour; at the top of the main stalk, and at the extremities of the several branches, there stand on long pedicles clusters of flowers, all sessile, and thick-set together; they are moderately large, and of a beautiful blue colour, and every cluster is surrounded with a series of leaves, disposed in a radiated manner, and exceeding the flowers in length.

This species is not a native of England, but is very common in the corn-fields of France and Germany. C. Bauhine calls it, *Asperula cærulea arvensis*.

2. *Asperula foliis octonis lanceolatis, floribus fasciculatis pedunculatis.*
The eight-leaved, lanceolate *Asperula*, with fasciculated flowers on pedicles.

Common
Woodruff.

The root of this species is small, oblong, and creeping, and is furnished with a number of fibres. The stalks are square; they grow to about a foot in height, but they are weak. At every joint there stand about eight leaves, of a dark green colour, oblong, narrow, and pointed at the extremities; they are disposed in a radiated manner. The stalk divides near the top into two or three ramifications, and on the summits of these stand clusters of moderately large, white flowers, each standing on a somewhat long pedicle: these have a very sweet smell.

This species is frequent in our woods; it flowers in May. C. Bauhine calls it, *Asperula five rubecula montana, odora*. Dodonæus, *Asperula odorata*; and Tournefort, *Aparine latifolia humilior montana*.

3. *Asperula foliis quaternis linearibus, floribus trifidis.*
The four-leaved *Asperula*, with linear leaves, and trifid flowers.

Squintancy
Woodruff.

The root of this little plant is very long, and penetrates deep into the earth; it is black, hard, and woody, and is furnished with a multitude of small fibres. From this rise a number of small, weak stalks, four or five inches long, and in great part procumbent: they are square, and of a pale green colour, and they often grow greatly beyond their usual length, but are in that case procumbent, and take root at the joints.

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On the lower part of the stalk the joints stand very thick; higher up, they are more distant from one another: at every joint there stand four smooth, narrow leaves, except at the summits of the branches, where there usually are only two at a joint. The flowers stand in clusters on the tops of the stalks, and form a kind of umbels; they are of a pale red colour, and sweet smell.

This species is found in many parts of England, in mountainous, but wet, places; it flowers in June. C. Bauhine calls it, *Rubia fynanchica*; others, *Synanchica*. Tournefort calls it, *Rubeola vulgaris quadrifolia levis floribus albidis*.

SHERARDIA.

THE calyx of the Sherardia is a small perianthium, formed of a single leaf, placed upon the germen, quadridentated at the edge, and permanent. The corolla consists of a single petal; the tube is cylindric and long; the limb divided into four segments, acute and plane. The stamina are four filaments, placed at the top of the tube; the antheræ are simple. The germen is didymous and oblong, and placed below the receptacle: the style is filiform, and divided into two parts toward the top: the stigmata are capitated: there is no pericarpium. The fruit is composed of two seeds, and is oblong, coronated, and easily splits longitudinally. The seeds are oblong, and have three points at the top, and are flat on one side, and convex on the other.

Of this genus there is only one known species, and that has been, by most authors, ranked among the Rubiæ.

SHERARDIA.

Little Fieldadder.

The root of this little plant is oblong and slender, and penetrates deep into the ground; it is hard and woody, and of a reddish colour. From this grow several stalks, which lie procumbent on the earth; they grow to six or eight inches long, and are square and hairy, sometimes branched, and usually of a reddish colour; at every joint of the stalk there stand several leaves arranged, in form of a radiated star; they are small, hairy, rough to the touch, broad, but terminating in a point: at the tops of the branches stand clusters of small, blue flowers, surrounded with a corona of leaves.

This plant is frequent in our corn-fields, and is described by all the old writers in botany. C. Bauhine calls it, *Rubeola arvensis repens cerulea*. Boerhaave, *Asperula cerulea repens*; and Tournefort, *Aparine supina flore cæruleo*.

SPERMACOCE.

THE calyx of the Spermacoce is a small perianthium, formed of a single leaf, quadridentated at the edge, affixed upon the germen, and permanent. The corolla consists of a single petal: the tube is cylindric, and longer than the cup; the limb is divided into four parts, patent-reflex, and obtuse. The stamina are four subulated filaments, shorter than the corolla; the antheræ are simple. The germen is roundish, compressed, and placed below the receptacle; the style is simple and bifid at the top, and the stigmata are obtuse. The fruit consists of two oblong capules, growing together, gibbous on one side, plane on the other, and obtuse; and each of them has two horns, or points. The seeds are single and roundish.

1. *Spermacoce verticillis globosis.*

The globular clustered Spermacoce.

The root is white and fibrous: the stalks are numerous, square, of a yellowish colour at the bottom, and green at the top. The leaves stand two at each joint; they are smooth, of a deep green, about an inch long, a third of an inch broad in the middle, narrow at the base, and pointed at the end. The radical leaves are of the same length, but broader: the plant rises to a foot and half high; the flowers stand in thick clusters at the tops of the stalks, and round the upper joints: they are small and white, and the clusters are about as big as a nutmeg.

It is a native of Africa, but is in some of our gardens. Dillenius calls it, *Spermacoce verticillis globosis*.

The other species are, 1. The broader-leaved *Spermacoce*, with smaller clusters; 2. The larger-flowered *Spermacoce*.

HEDYOTIS.

THE calyx is a small perianthium, divided into four short segments at the edge: the corolla consists of a single petal. It is of an infundibuliform shape, and very open at the mouth. The stamina are four moderately thick filaments: the antheræ are simple and large; the germen is roundish; the style is small, and the stigma obtuse: the fruit is a capsule, containing two cells, and in them a great number of small seeds.

There is but one known species of this genus, and that is so well distinguished by these characters, that it needs no farther description.

KNOXIA.

THE calyx is a perianthium, composed of a single leaf, divided into four segments, one of which is larger than the rest. The corolla consists of a single petal, of an infundibuliform shape: the stamina are four oblong, slender filaments; the antheræ are large and simple. The germen is roundish; the style simple, and moderately thick; the stigma small; the seeds are two, and sulcated.

This genus is very nearly allied to the *Hedyotis*. There is but one known species of it, and that is so sufficiently distinguished by its characters, as to need no farther description.

DIODIA.

THE calyx of the *Diodia* is a perianthium, composed of two leaves, which are equal, of a subovate figure, and are affixed upon the germen, and permanent. The corolla is composed of a single petal, and is of the ringent kind: the tube is slender, and longer than the cup: the upper lip is erect and bifid; the lower lip is patent, and divided into two lanceolated segments. The stamina are four erect, setaceous filaments, the two opposite ones somewhat longer than the other two; the antheræ are oblong and versatile. The germen is of a roundish, but somewhat obscurely squared, figure: the style is filiform, and of the length of the stamina; the stigma is bifid. The fruit is an oval, quadrangular capsule, coronated and formed of two valves, and containing two cells: the seeds are single, of an ovato-oblong figure, smooth and flat on one side, and convex on the other.

Of this genus there is but one known species; it approaches greatly to the *Melampyrum*, but it is a distinct genus. It is too well distinguished by its characters, to need any farther description. It is a native of Virginia.

CRUCIANELLA.

THE calyx of the *Crucianella* is composed of three leaves of a lanceolated figure, hollowed, pointed, and rigid, somewhat compressed and connivent. The corolla consists of a single petal: the tube is cylindric, filiform, and longer than the cup; the limb is small, and divided into four parts. The stamina are four filaments, placed in the mouth of the tube: the antheræ are simple. The germen is compressed, and placed between the calyx and the corolla; the style is filiform, and of the length of the tube; and the stigmata are two in number, and obtuse; one of these terminates the style, and the other stands sessile below its extremity. The fruit consists of two capsules, which grow together: the seeds are single and oblong.

This genus comprehends the *Rubeola* of Tournefort.

1. *Crucianella*

1. *Crucianella erecta foliis senis.*
The erect, six leaved Crucianella.

**Narrow-leaved,
 spikedadder.**

The root of this species is oblong and hard, of a dusky reddish colour, and furnished with a great number of fibres. From this there usually arise six or eight stalks; they are square, rough, and frequently jointed: from every joint there grow several branches opposite to one another, and at every joint there stand six leaves, oblong, narrow, somewhat rough, and pointed at the ends. On the tops of the stalks stand long and narrow spikes, of whitish flowers. The whole plant grows to ten or twelve inches high, and is very well able to support itself erect.

We have it not native in England, but in France it is common, and also in Germany. Tournefort calls it, *Rubeola angustiore folio*. C. Bauhine, *Rubia angustifolia spicata*.

2. *Crucianella procumbens foliis quaternis.*
The procumbent Crucianella, with four leaves at a joint.

The root of this species is moderately large, oblong, crooked, woody, of a reddish colour, and furnished with a number of fibres. From this rise several stalks, which are square, and somewhat hairy, but they trail upon the ground. At every joint of these stalks there stand four leaves, disposed in form of a radiated star, and of a lanceolated figure; from the axils of these leaves there also grow stalks all the way up the plant, so that, when full grown, it makes a very bushy figure. At the top of the main stalk, and of several of the branches, there stand spikes of flowers very long, appearing of a kind of square figure, and greenish colour; the flowers themselves are very small and greenish.

This species is a native of some parts of France, and is common in the Islands of the Archipelago. We have it in some of our gardens. Tournefort calls it, *Rubeola latiore folio*. C. Bauhine, *Rubia latifolia spicata*.

H O U S T O N I A.

THE calyx of the *Houstonia* is an extremely small perianthium; it is erect, permanent, and quadridentated. The corolla consists of a single petal, and is of an infundibuliform shape: the tube is cylindric, and long; the limb is patent, and is divided into four roundish segments. The stamina are four very small filaments, situate in the neck of the corolla: the antheræ are simple: the germen is roundish and compressed; the style is simple, and shorter than the stamina: the stigma is bifid and acute. The fruit is a roundish, didymous capsule, composed of two valves, and containing two cells, in each of which is a single seed.

Of this genus there is only one known species.

H O U S T O N I A.

The root is fibrous; the radical leaves are about half an inch long, narrow, and pointed at the ends; they lie expanded circularly on the ground. The stalks are numerous, round, smooth, and three or four inches high; they run up naked to about two inches, where they have a knot, at which grow two or three leaves: at this place also the stalk divides into two or three parts, and on the summit of each of these stands a single flower, moderately large, and of a beautiful blue colour.

It is a native of Virginia. Morison calls it, *Paronychia facie planta tetrapetaloides Virginiana flore carnleo*.

G A L L I U M.

THE calyx of the *Gallium* is a very small perianthium, composed of one leaf, quadridentated at the edge, and fixed upon the germen. The corolla consists of a single petal, which has no tube, but is divided into four segments, plane and acute: the stamina are four subulose filaments, shorter than the corolla: the antheræ are simple: the germen is didymous, and stands below the receptacle: the style is filiform,

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of the length of the stamina, and semihisid; the stigmata are capitata. The fruit consists of two dry berries of a globose figure, growing close together, but not cohering: the seeds are single, large, and umhilicated.

This genus comprehends the Gallium and the Aparine of Tournefort, and others; nay even of Linneus himself; for, tho' there are the characters of these delivered separately in his Genera Plantarum, 97 and 98, as of two genera, and under the two names of Gallium and Aparine, on comparison they will be found to be the same; the very words are almost literally repeated.

1. *Gallium foliis plurimis linearibus, ramis floriferis brevibus.*

**Yellow Ladies-
Bedstraw.**

The many-leaved Gallium, with short flowering branches.

The root of this species creeps a long way under the surface of the ground, and is slender, woody, and brown. From the several parts of this rise stalks, which grow to two feet in height; they are roundish, and often red. At the joints stand numbers of very narrow leaves, in form of a star, of a blackish-green colour, and pointed at the ends; there are usually eight or nine at a joint: at each joint there commonly are also two branches; at the tops of these, as well as of the main stalks, stand clusters of beautiful yellow flowers.

The plant is frequent in our pastures, and by way-sides. C. Bauhine calls it, Gallium luteum. Haller, Gallium foliis octonis gracilissimis, spica flores caulem terminante.

2. *Gallium foliis pluribus acutis, caule flaccido, ramis patentissimis.*

**White Ladies-
Bedstraw.**

The acute and many-leaved Gallium, with a flaccid stalk, and patent branches.

The root of this species creeps under the surface, and is slender, jointed, and furnished with a multitude of fibres; from the joints rise stalks, which grow to two feet, or more, in length; but are weak, and scarce able to support themselves quite erect. They are square, and their joints stand at considerable distances: at every joint there are placed about eight leaves, in a radiated form; they are oblong, and pointed, and somewhat broad. At the top of the stalk, and of the branches, which are very pinnate, stand great clusters of white, small flowers.

This species is very frequent with us in pastures. Tournefort calls it, Gallium album vulgare. Haller, Gallium caule quadrangulo foliis octonis glabris, acuminatis.

3. *Gallium caule subaspero, foliis lineari-lanceolatis spinulis terminatis.*

**Little Clea-
vers.**

The rough-stalked Gallium, with lineari-lanceolated leaves, terminated by spines.

This is one of the Galliums commonly known under the name of an Aparine, but it differs greatly from the species, called Common Cleavers. Its root is slender and creeping, and from every joint sends up two or three stalks; these are square, but weak, and grow to about eight inches high. At every joint there stand four, five, or six leaves; narrow, and pointed at the extremity, somewhat rough to the touch, and of a greyish-green colour: at the top of the stalk stand little clusters of white flowers, larger than those of the common cleavers, though the plant itself is so much smaller.

This species is frequent with us under hedges in spring. Tournefort calls it, Aparine palustris minor Parisensis flore albo. Haller, Gallium caule subaspero, foliis quadratis et senis spinula terminatis.

The other more singular species of this genus are, 1. of those called Gallia: 1. The broad-leaved, branched, mountain Gallium. 2. The narrow-leaved, purple-flowered Gallium. 3. The annual, yellow Gallium. 4. The verticillate, yellow Gallium. 5. The glaucous-leaved Gallium. 6. The little mossy Gallium: 2. Of those called Aparines,

Aparine, there are, 1. The common Aparine. 2. The small-fruited Aparine. 3. The verrucous Aparine. 4. The echinated Aparine. 5. The little, narrow-leaved Aparine. 6. The purple, hoary-leaved Aparine.

The common Aparine is in some esteem as an antiscorbutic. The yellow Gallium is spoken of by some as singular, in that it yields an acid liquor in distillation: analyses of plants were not common, when this was advanced: I know scarce any plant that does not yield such an acid.

RUBIA.

THE calyx of the Rubia is a very small perianthium, formed of one leaf, quadridentated, and affixed on the germen. The corolla consists of a single petal, without a tube; it is divided into four segments, plane, acute, and hollowed at the base: the stamina are four subulated filaments, shorter than the flower; the anthers are simple: the germen is didymous, the style is filiform, and bifid at the top; the stigmata are capitated. The fruit consists of two succulent, smooth, round berries, growing together: the seed is single, roundish, and umbilicated.

1. *Rubia foliis senis.*
The six-leaved Madder.

Gadde.

The root of this species is long, moderately thick, and disperses itself under the surface every way; it is of a reddish colour, succulent and tender in the outer part, but with a woody fibre in the middle. Its taste is partly sweet, partly acute, and somewhat bitterish. The stalks grow to two or three feet; they are square, weak, and rough to the touch, having a kind of sharp, hooked spines set all the way down them. At every joint there stand six leaves in a radiated form; they are oblong, moderately broad, pointed, and rough to the touch: at the top of the stalk, and of the branches growing from the side of the leaves, stand clusters of small flowers of a greenish yellow colour.

This plant is not a native of England; it is cultivated in Germany, for the root. C. Bauhine calls it, *Rubia tinctorum sativa*; others, *Rubia hortensis*.

2. *Rubia foliis quaternis.*
Four-leaved Madder.

WIND Gadde.

The root of this species is composed of a number of long, slender ramifications, spreading every way under the surface; it is hard, of a brownish colour, and of an austere taste: the stalk rises to a foot high, and at every joint has a set of leaves, usually four, disposed in a radiated form; these are short, somewhat broad, pointed at the ends, and rough to the touch. At the top of the branches and of the main stalk stand clusters of small yellow flowers.

This species is a native of England, but not common. I met with it this year, near Colsterworth in Lincolnshire, in considerable abundance. C. Bauhine calls it, *Rubia sylvestris aspera* quæ *sylvestris Dioscoridis*.

The root of the first species is used in dying; and also in medicine, as a deobstruent.

Class the Fourth. Order the First.

Division the Third.

Tetrandria Monogynia, with monopetalous flowers, without the peculiar characters of the second division.

SIPHONANTHUS.

THE calyx is a small perianthium: the corolla consists of a single petal, which is extremely long, and placed below the germen. The stamina are four slender filaments; the anthers are oblong, and thick: the fruit is a congeries of four roundish and moderately large berries, in each of which is contained a single seed.

These

These characters render the distinction of the *Siphonanthus* from the *Catesbæa*, and all the other plants of this class, too obvious to let it need any farther description.

C A T E S B Æ A.

THE calyx of the *Catesbæa* is a very small perianthium, quadridentated, acute, and permanent. The corolla consists of a single petal, and is of a funnel-like shape: the tube is most remarkably long, strait, and thicker upwards than at the base: the limb is broad, lightly divided into four segments, and erecto-plane; the stamina are four filaments, situate within the tube of the corolla: the antheræ are oblong, erect, and reach to the extremity of the corolla: the germen is roundish, and placed below the calyx; the style is filiform, and of the length of the corolla: the stigma is simple: the pericarpium is an oval, corioated, unilocular berry: the seeds are numerous and angular.

This shrub is described by the late Mr Mark Catesby, from whom it is named, under the name of *Lycium*.

I X O R A.

THE calyx of the *Ixora* is a very small perianthium, quadridentated, erect, and permanent. The corolla consists of a single petal; the tube is cylindric, very long and slender: the limb is plane, and divided into four oval segments: the stamina are four filaments, situate in the divisions of the corolla; they are very short and crooked; the antheræ are oblong: the germen is roundish; the style is filiform, and of the length of the tube; the stigma is bifid; the fruit is a berry of a roundish figure, with only one cell: the seeds are four in number, convex on one side, and angular on the other.

There is but one species of this genus, which is described in the second volume of the *Hortus Malabaricus*, T. 13. 14.

A V I C E N N A.

THE calyx of the *Avicenna* is a perianthium, consisting of one leaf, divided into five segments, acuminate, erect, and permanent. The corolla consists of a single petal, and is plane, and divided into four ovato-acuminate segments: the stamina are four subulate filaments, shorter than the corolla; the antheræ are bifid. The germen is oval; the style is subulate, short, and permanent: the stigma is acute. The perianthium is a coriaceous capsule, oval, but terminating in a point, containing only one cell, and not splitting open: the seed is single, compressed, and of an elliptic figure, and germinates within the pericarpium.

There is but one known species of this genus, which is described in the fourth volume of the *Hortus Malabaricus*, F. 45.

P E N Æ A.

THE calyx of the *Penæa* is a perianthium, consisting of two leaves; these are hollow, equal, coloured, of a lanceolated figure, placed opposite to one another, lax, deciduous, and but of about half the length of the corolla. The corolla consists of a single petal, and is of the campanulated kind: the limb is much shorter than the tube, and is patulous, and divided into four acute segments: the stamina are four very short filaments, and are affixed to the tube of the corolla, between the segments, and are erect and naked: the antheræ are erect, plane, and emarginated at each end: the germen is of an oval figure, but quadrangular: the style is rendered quadrangular also by four longitudinal, membranaceous alæ affixed to it: the stigma is cruciform, obtuse, and permanent. The fruit is a quadrangular capsule, with its style remaining affixed to it; it is formed of four valves, and contains four cells. The seeds are two in each cell, and are oblong and obtuse.

The *Sarcocolla* of the shops has been supposed to be the produce of this plant, but erroneously.

PAVETTA.

P A V E T T A.

THE calyx is a small perianthium, divided into four segments at the extremity: the corolla consists of a single petal, which is of an infundibuliform shape, and stands upon the germen: the stamina are four subulated filaments: the germen is roundish, the style slender, and the stigma crooked. The fruit is a roundish, moderately large berry, containing only a single seed.

The curvature of the stigma of the Pavetta is so obvious a distinction, that there needs no farther description of it.

C A L L I C A R P A.

THE calyx is a perianthium, divided into four segments at the edge: the corolla is expanded, and divided also into four segments: the stamina are four slender filaments: the anthers are tumid and oblong: the germen is roundish; the style slender, and the stigma simple. The fruit is a single, roundish berry, containing six seeds.

The number of seeds in the berry is a sufficient distinction of the Callicarpa. We could wish to have had opportunity of being longer on all the genera, but it is necessary, in a work circumscribed within the limits of ours, to be short on the less essential parts, so nothing necessary to the knowledge of the science is omitted, that we may have room to be sufficiently large on the more interesting particulars.

B L Æ R I A.

THE calyx of the Blæria is a perianthium, composed of four little, erect, linear leaves, somewhat shorter than the corolla, and permanent: the corolla is formed of a single petal: the tube is cylindric, of the length of the cup, and pervious: the limb is small, and is divided into four oval, reflex segments: the stamina are four setaceous filaments, inserted into the cup, and of the length of the tube of the flower: the anthers are oblong, erect, compressed, obtuse, and emarginated. The germen is quadrangular and short: the style is setaceous, and much longer than the corolla: the stigma is obtuse. The fruit is an obtuse, quadrangular capsule, containing four cells, and opening at the corners; in each cell there are several roundish seeds: the anthers, though emarginated, are not bicornate. These characters are sufficient, without the addition of a description.

P O L Y P R E M U M.

THE calyx is a perianthium, composed of four pointed leaves: the corolla is composed of a single petal, and is of the rotated form, divided into four segments, which are broad, and overfely cordated. This structure of the corolla alone is so different from that of all the other plants of this class, that there need no farther characters.

E X A C U M.

THE calyx is a perianthium, composed of four leaves: the corolla consists of a single petal, formed into a tube, of a somewhat globose figure, and divided at the extremity into four segments. The stamina are four slender filaments: the anthers are short: the germen is oval, and marked with two furrows: the style is slender; the stigma simple. The fruit is a capsule, opening at the top, marked with two deep furrows, and containing two cells.

These characters are so obvious a distinction of the Exacum from all the other plants of this genus, as to render a farther description unnecessary.

O o o

B U D D L Æ A.

BUDDLÆA.

THE calyx of the Buddlæa is a very small, permanent perianthium; it is composed of one leaf, lightly divided into four segments, acute and erect. The corolla consists of a single petal, lightly divided into four oval, acute segments, and three times as large as the cup. The stamina are four very short filaments, placed at the divisions of the flower: the antheræ are simple, and very short: the germen is oval: the style is simple, and of scarce half the length of the corolla: the stigma is obtuse: the fruit is an oval, oblong capsule, marked with two furrows, and containing two cells. The seeds are very numerous, and very small.

Of this genus there is but one known species; it is an American, described by Houston.

PLANTAGO.

THE calyx of the Plantago is a perianthium, divided into four parts, erect, very short, and permanent. The corolla consists of a single petal, and is of very short duration: the tube is of a cylindraceo-globose figure: the limb is divided into four oval, acute segments: the stamina are four erect, capillary, and extremely long filaments: the antheræ are oblong, compressed, and incumbent. The germen of the pistil is oval: the style is filiform, and scarce of half the length of the stamina: the stigma is simple. The fruit is a capsule of an oval figure, containing two cells, and opening longitudinally: the seeds are numerous, and very small. The calyx in most species is equal, in some unequal.

This genus comprehends the Plantago, Coronopus, Pysillum, Scoparia, and the Gramen junceum of some authors.

1. *Plantago foliis ovatis glabris.* **Common broad-leaved Plantain.**
The smooth and oval-leaved Plantain.

The root of this species is of the thickness of a man's finger, but short, and, as it were, cut off, and is furnished with a great number of fibres: from this arise six or eight leaves, which are somewhat hairy at their first appearance, but afterwards smooth, broad, obtuse, and marked with three strong longitudinal ribs on each side of the principal or middle one. From the center of this cluster rise a number of stalks, round, moderately thick, succulent, and somewhat hairy, ten or twelve inches in height; the greater part of these is formed into the spike of flowers, which is slender and cylindric: the apices are purple.

This species is common every-where with us, by way-sides. C. Bauhine calls it, *Plantago latifolia vulgaris*.

The beautiful Rose Plantain is only a variety of this common species.

2. *Plantago foliis linearibus, pinnato-dentatis.* **Buck's-horn Plantain.**
The linear and pinnato-dentated-leaved Plantain.

The root of this species is long, white, moderately thick, and of a sweet and pleasant taste. From this arises a cluster of leaves, spreading themselves every way from the center, so as to appear radiated. They are four or five inches long, narrow, and divided at the edges into long and slender segments, giving some distant resemblance of the figure of a stag's-horn: among these rise several stalks, round, hairy, and four or five inches in length, often much more: at the top stands a long, slender spike, like that of the common Plantain.

This species is frequent with us on heaths, and in barren places. C. Bauhine calls it, *Coronopus sylvestris hirsutior*; others, simply, *Coronopus*.

3. *Plantago caule ramoso, foliis dentatis, spicis nudis.*

The dentated-leaved, naked-spiked, branched **Common Fleawort.**
Plantain.

The root of this species is long, slender, and white, and has a few fibres. From this rises the stalk, which grows to a foot, or more, in height, and is round, solid, erect, hairy, and branched almost from the bottom to the top: at every joint of the stalk stand two leaves, long, narrow, and dentated on the edges, so as, in some measure, to resemble those of the coronopus, or buck's-horn Plantain. The tops of the branches are somewhat viscid to the touch: from the ale of the leaves there grow long pedicles, on the tops of which stand short and thick spikes, composed of clusters of little, whitish flowers, which are succeeded by beautiful, glossy, black seeds; which, thrown into boiling water, make a fine mucilage.

This species is not a native of England, but we have it in some of our gardens. C. Bauhine calls it, *Psyllium Dioicordis, vel Indisperm, foliis crenatis*. The seeds of this species are, or ought to be, used in the shops; those of the great *Psyllium* are usually sold in their place.

4. *Plantago scapo uniflora.*
The single-flowered Plantain.

Long-threaded
Rush-grass.

The root of this little plant is composed of a great number of considerably long and thick fibres: from this rise several oblong, narrow, thick, and succulent leaves; they are two or three inches in length, and scarce an eighth of an inch in breadth, and lie upon the earth in a radiated manner. From the center of these grow several stalks, often not half an inch high; each has on it's summit a single flower, small, and compressed, but with four very remarkably long stamina rising from it.

This little plant is found in boggy places, in many parts of England; I met with it this year in Borough-phen near Peterborough. Tournefort calls it, *Plantago palustris gramineo folio monanthos*. Morison, and others, *Gramen junceum minus capitulis longissimis filamentis donatis*.

The other species of Plantain are very numerous; of the common Plantain kind the more singular are, 1. The broad-leaved, hoary Plantain. 2. The narrow-leaved Plantain. 3. The ferrated, narrow-leaved Plantain. 4. The shrubby, narrow-leaved Plantain. 5. The hairy, bulbous Plantain. 6. The narrow-leaved, sea Plantain. 7. The grassy-leaved Plantain. 8. The hairy, sea Plantain. Of the *Psyllium* kind are, 1. The common great *Psyllium*. 2. The great procumbent *Psyllium*. 3. The little *Psyllium*.

The leaves of the common Plantain are refrigerating and diuretic: the root of the *Coronopus* is esculent: the seeds of the *Psyllium* make a mucilage much used in fevers.

CENTUNCULUS.

THE calyx of the *Centunculus* is a perianthium, divided into four, acute, lanceolated segments, longer than the corolla, and permanent: the corolla consists of a single petal: the tube is inflated, and of a somewhat globular figure: the limb is plane, and is divided into four suboval segments: the stamina are four filaments, nearly of the length of the flower: the anthers are simple: the germen is roundish, and placed within the tube of the corolla: the style is filiform, of the length of the corolla, and is permanent: the stigma is simple: the fruit is a globose capsule, containing only one cell, and opening horizontally: the seeds are roundish, very numerous, and very small.

This genus comprehends only the plant called *Anagallis arvensis* by Michx, and *Anagallis* species, by Vaillant, 4. f. 2.

CENTUNCULUS.

CENTUNCULUS.

The root of this little plant is a slender, white fibre, divided into two or three ramifications toward the bottom, and furnished with a few capillaments. From this arise four or five stalks, round, two or three inches long, and procumbent; the leaves stand alternately, and at considerable distances; they are small, short, and somewhat broad, and pointed at the end: in the axils of every leaf stands a very minute, white flower, scarce visible, and fading very soon; but in its place there comes a capsule, round, and very large, for the bigness of the plant.

This little plant is a native of England, but is not common; I found it this year on Hounslow-heath.

SANGUISORBA.

THE calyx of the Sanguisorba is a perianthium, composed of two very short leaves, placed opposite to one another, and soon falling off. The corolla is formed of a single petal, plane, and divided into four parts; the segments are oval, obtuse, and connected only by the extremities. The stamina are four filaments, of the length of the corolla, broader at the top than elsewhere: the anthers are small and roundish; the germen of the pistil is quadrangular, and is situated between the calyx and corolla: the style is filiform, and very short: the stigma is obtuse: the fruit is a small, bilocular capsule; the seeds are small.

1. *Sanguisorba spicis ovatis.*
The oval-spiked Sanguisorba.

Great
Burnet.

The root of this species is thick, oblong, and of an acrid, bitterish taste. From this rise pinnated leaves, of six or eight inches in length, composed of a number of pinnae, set in pairs, and resembling the leaves of betony, but more deeply indented, smooth, and glossy: among these rise several stalks, three feet high, round, striated, not hairy, and hollow; on these stand leaves, like the radical ones, but smaller, alternately, and at considerable distances. At the tops of the branches stand the flowers, arranged into short, oval spikes, of a brown colour.

This species is frequent in meadows, in some parts of England. C. Bauhine calls it, *Pimpinella sanguisorba major*; Haller, *Pimpinella foliis oblonge cordatis, spica brevi*.

2. *Sanguisorba spicis oblongis.*
The oblong-spiked Sanguisorba.

American
Burnet.

The root of this species is very large, oblong, and whitish: the radical leaves are a foot and half long, composed of a great number of large pinnae, dentated at the edges, and of a cordated, oblong figure. The stalk grows to four feet high, and has leaves like the radical ones, but smaller, placed alternately on it; toward the top it sends out many branches, and, at the top of each, stands a spike of flowers, two or three inches long, and of the thickness of a finger; the flowers are small, and of a greenish-white.

This species is a native of North America, but we have it in our gardens. Cornutus calls it, *Pimpinella maxima*; Gerard, and others, *Pimpinella Canadensis*, and *Hortensis maxima*.

The other species of Sanguisorba are, 1. The auriculated-leaved, tall Sanguisorba. 2. The great, glomerated-headed Sanguisorba. 3. The great, purple-spiked Sanguisorba. 4. The agrimony-leaved Sanguisorba. 5. The little, hairy Sanguisorba. 6. The little, smooth Sanguisorba. 7. The ever-green Sanguisorba.

The great Sanguisorba is celebrated as a cordial, or iudoxic, and astringent, but, though great cures are said to have been performed by it, the present practice neglects it.

CISSUS.

C I S S U S.

THE calyx is a plane perianthium: the corolla is composed of a single petal, lightly divided into four segments at the edge: the stamina are four slender filaments: the antheræ are oblong, and tumid: the germen is roundish: the style is short: the stigma simple. The fruit is a roundish berry, containing only a single seed, and is lodged within the corolla.

These characters are sufficiently distinctive and obvious, without any farther description.

Class the Fourth. Order the First.

Division the Fourth.

Tetandria Monogynia, with tetrapetalous compleat flowers.

E P I M E D I U M.

THE calyx of the Epimedium is a deciduous perianthium, composed of four oval, obtuse, hollow, little leaves, placed immediately under the petals of the corolla, not alternately with them: the corolla consists of four oval, obtuse, hollow petals: the nectaria are four in number; they are formed like cups; their bottom is obtuse; they are of the size of the petals, and are incumbent on them, and the edge of their opening is affixed to the cup: the stamina are four subulated filaments, compressing the style: the antheræ are oblong, erect, and bilocular, formed of two valves, and splitting longitudinally: the germen is oblong: the style is shorter, and is only of the length of the stamina: the stigma is simple: the fruit is an oblong pod, pointed at the end, formed of two valves, and having only one cell: the seeds are numerous, and of an oblong figure.

Of this genus there is only one known species.

Epimedium.

Barrenwort.

The root of the Epimedium is very long, slender, and creeping: the radical leaves stand on pedicles of five inches long, round, slender, and glossy; these divide at their top into three ramifications, and each of these is again divided into three; and, at the extremity of each of these last ramifications, stands a single leaf, an inch, or more, in length, half an inch in breadth, of a pale green, auriculated, and pointed at the end; nine of these compose the compleat radical leaf: three or four of these usually arise from the same part of the root, and among them a stalk, a foot, or somewhat more, in height, round, rigid, smooth, and furnished with one compound leaf about it's middle; above this it divides into three or four branches, and each sustains five or six very beautiful purple flowers, with a mixture of yellow.

This elegant plant is a native of England: I have found it in some of the woods in Yorkshire; it grows also abundantly in a wood near Tborndon in Essex, but this has probably been from roots thrown out of the late lord Petre's garden.

C O R N U S.

THE calyx of the Cornus is double: the common involucrem is formed of four leaves, and contains several flowers, with their peduncles: the leaves it is composed of are coloured, of an oval figure, and deciduous; the two opposite ones are smaller than the others. The proper perianthium is also deciduous; it is very small, and is placed on the germen; it is formed of a single leaf, dentated in four places on the rim: the corolla consists of four oblong, acute, plane petals, smaller than the involucrem: the stamina are four erect, subulated filaments, longer than the corolla: the antheræ are roundish and incumbent: the germen is roundish, and is placed beneath the receptacle: the style is filiform, and of the length of the corolla: the stigma is obtuse. The fruit

P p p

is

is a roundish, umbilicated drupe: the nut within it is oblong, and umbilicated, and contains two cells, in each of which is a single, oblong kernel.

This genus comprehends the *Cornus* of authors, and the *Virga sanguinea* of Dillenius.

1. *Cornus umbellis involucrium æquantibus.*

The *Cornus*, with the umbellæ equalling the involucrium.

The Cornelian Cherry.

This species grows to a large and tall tree, and is much branched. The bark is greyish, or reddish; the wood white, solid, and hard: the leaves are oblong and broad, smooth on the surface, even at the edges, and full of large ribs: at the extremity of the branches stand clusters of flowers, small, and disposed in 'umbellæ': after these come fruits, resembling an olive, but not so thick; they are green at first, and afterwards of a beautiful red, staining the hands, when bruised; they are, at first, of an acerb taste, but, when quite ripe, of an agreeable mixture of sweet and acid. C. Bauhine calls this, *Cornus hortensis* mas. J. Bauhine, *Cornus fativa seu domestica*.

It is a native of Misnia, Austria, and some other places: it succeeds very well in our gardens.

2. *Cornus umbellis involucrio multoties longioribus.*

The *Cornus*, with umbellæ many times longer than the involucrium.

The Female Cornell.

This species rises to about four or five feet, and is not much branched. Its bark is of a dark brown; its wood white, and very firm and solid: its trunk seldom exceeds three quarters of an inch in diameter. The leaves are two inches long, an inch and a half broad, full of large veins, even at their edges, and they terminate in a point. The flowers are small, and of a greenish-white; they stand in umbellæ at the tops of the branches, and are succeeded by oblong fruits, of the bigness of a pea, and of a green colour at first, but blackish, when ripe.

This species is frequent in our hedges. The bark of its younger shoots is often red, as are also many of the leaves, in which case it makes a singular and beautiful figure. C. Bauhine calls this, *Cornus femina*; others, *Virga sanguinea*.

The other species of *Cornus* are, 1. The great, yellow-fruited Cornell. 2. The white-fruited, short-leaved Cornell. 3. The American Cornell, with corymbose flowers, and a large, white perianthium; and, 4. The herbaceous *Cornus*, called by authors *Chamaeperelymenum*, or the Dwarf Honeyfuckle.

EUONYMUS.

THE calyx of the *Euonymus* is a plane perianthium, formed of one leaf, divided into four roundish and hollow segments: the corolla consists of four plane, oval, patent petals, and is larger than the cup: the stamina are four erect, subulate filaments, shorter than the corolla, and inserted on the germen: the antheræ are didymous: the germen is acuminate: the style is short and simple: the stigma is obtuse. The fruit is a succulent, coloured capsule, of a quadrangular figure, formed of four valves, terminating in as many points, and forming as many cells: the seeds are single, of an oval figure, and covered with a calyptra.

There are sometimes five stamina, petals, &c. and sometimes no filaments but the points of the receptacle.

1. *Euonymus foliis oblongo-ovatis.*

The oblongo-oval leaved *Euonymus*.

The Spindle-tree.

This is a shrub of six or eight feet high: the bark of the stem is brown, the wood white and firm, the root large and brachiated. The bark of the young shoots is green, and forms four ridges at nearly equal distances, so that they appear square: the leaves are two inches long, of a bright green colour, moderately broad, and terminate in a point. The flowers are very small and greenish; the fruit is a very elegant one, of the bigness of a small nut, green at first, but of a beautiful scarlet, when ripe.

This

This species is frequent in our hedges. C. Bauhine calls it, *Euonymus vulgaris graminis rubentibus*; others, *Euonymus Theophrasti*, and *Tetragonia*.

2. *Euonymus foliis lato-lanceolatis serratis*
The *Euonymus*, with broad, lanceolated, and serrated leaves.

Virginian
Spindle-
tree.

This is a moderately large and very beautiful tree. It's bark is smooth, brown on the trunk, and greenish on the branches: the leaves are of a beautiful green, smooth on the surface, and elegantly serrated at their edges: the flowers are very small, and of a yellowish-green: the fruit is of the size of a large pea, of a beautiful red colour, and verrucose. It consists of five capsules, not of four, as that of our *Euonymus*, and therefore is pentangular: the calyx also is divided into five segments, and the flower has five petals, and five stamina.

This species is a native of Virginia; it stands very well in our gardens. Plukenet calls it, *Euonymus Virginianus pyracanthæ folijs, capsula verrucarum instar exasperata rubente*. Gronovius, *Euonymus foliis lanceolatis*.

The other species of *Euonymus* are, 1. The red-flowered *Euonymus*, with black fruit. 2. The broad-leaved *Euonymus*. 3. The African *Euonymus*, with lucid, serrated leaves; and, 4. The broad-leaved, American *Euonymus*, with clustered, pentagonal, black fruit.

T O M E X.

THE calyx is a perianthium, formed of a single leaf, of a cylindric shape, and divided into four short segments at the edge; the corolla consists of four petals; the stamina are four very long filaments: the antheræ are small; the germen is roundish, the style is long and slender, and the stigma is emarginated. These characters are so distinctive and obvious, that no farther description is necessary.

P T E L E A.

THE calyx of the *Ptelea* is a small perianthium, divided into four parts. The corolla consists of four petals, of an ovato-lanceolate figure, plane, patent, and larger than the cup: the stamina are four subulated filaments; the antheræ are roundish: the germen is orbiculated and compressed; the style is short; the stigmata are two, and are acute. The fruit is a roundish, perpendicular membrane, having a cavity in it's center for the seed, which is single, and of a cylindric figure.

The fruit of the *Ptelea* is extremely like that of the elm, but all the other parts of the fructification are different. The stamina, segments of the cup, &c. are sometimes five instead of four.

Of this genus there is only one known species, called, *Frutex ulmi facie*, by Dillenius and others. The characters render a description unnecessary.

L U D W I G I A.

THE calyx of the *Ludwigia* is a permanent perianthium, situate on the germen, and formed of a single leaf, divided into four lanceolated segments, patent, and of the length of the corolla: the corolla consists of four plane, patent, equal petals, of an obversely, cordated figure: the stamina are four short, erect, subulated filaments: the antheræ are simple, oblong, and erect; the germen is tetragonal, and clothed with the base of the cup: the style is cylindric, and of the length of the stamina: the stigma is obscurely tetragonal and capitated: the fruit is a quadrangular, obtuse capsule, surrounded by the cup, and coronated with it at the extremity; it contains four cells, and opens in four places at once: the seeds are numerous and small.

Ludwigia

Ludwigia capsulis cubicis apice perforatis.
The Ludwigia, with cubic capsules perforated at
the base.

Virginian pet-
 low Willow:
 herb.

This plant grows to a foot high: the stalk is erect, firm, and branched: the leaves stand alternately, and are of a lanceolated figure, and undivided at their edges: the flowers stand singly down the sides of the upper part of the stalks; they are large, and of a beautiful yellow: the root is composed of a multitude of fibres: the capsule is shorter than the cup, smooth, of a cubic figure, and perforated at the extremity.

It is a native of Virginia, but stands very well in our gardens. Plukenet calls it, *Lyfimachia non papposa, flore luteo majore, siliqua caryophylloide minore ex Virginia.*

OLDENLANDIA.

THE calyx of the Oldenlandia is a permanent perianthium, placed upon the germen, and formed of a single leaf, divided into four subulated segments. The corolla consists of four oval petals, patent, and twice as long as the segments of the cup: the stamina are four simple filaments: the antheræ are small: the germen is roundish, and placed under the cup: the style is simple, and of the length of the stamina: the stigma is emarginated. The fruit is a coriaceous globular capsule, containing two cells: the seeds are numerous, and very small.

There is but one known species of this genus. It is an American, described by Plumier.

AMMANIA.

THE calyx of the Ammania is a permanent perianthium, of a campanulated figure, oblong, erect, quadrangular, marked with eight striæ and plicæ, and divided into eight denticular segments, at the extremity the alternate ones. The corolla, when not wanting, consists of four petals inserted into the calyx, placed vertically and patent: the stamina are four setaceous filaments, of the length of the calyx, and inserted into it: the antheræ are didymous: the germen is large, and of a somewhat oval figure: the style is simple, and very short; the stigma is capitated. The fruit is a roundish capsule, surrounded by the cup, and containing four cells: the seeds are numerous and small. Houston figures the four petals from his American plants; they are wanting in those which flower with us.

Ammania foliis semiamplexicaulibus.

The Ammania, with leaves almost surrounding the stalks.

This is a shrubby plant: it grows to a foot, or two, in height; its stem is woody, the bark brown and smooth: the leaves stand two at a joint, opposite one to another. They are an inch and a half long, and not more than an eighth of an inch broad at the base, where they are broadest, and surround part of the stalk; from thence they grow narrower all the way, till they terminate in a point; they are hollowed, smooth, and even at the edges. The flowers stand in the axils of the leaves: the fruit in the cup, when full grown, is of the size of a pea; the root is formed of a number of woody fibres.

This is a native of Barbadoes, and the neighbouring islands. Sir Hans Sloane, Ray, &c. call it, *Aparines folio vâculo feminali rotundo, feminibus minutissimis.*

TRAPA.

THE calyx of the Trapa is a permanent perianthium, formed of one leaf, and divided into four acute segments. The corolla consists of four petals, vertically ovated, and larger than the cup: the stamina are four filaments, of the length of the cup: the antheræ are simple: the germen is oval: the style is simple, and of the length of the cup: the stigma is capitated and emarginated. The fruit is a hard osseous capsule, of an oblong, oval figure, containing only one cell, and armed with four sharp, thick

thick spines, placed oppositely in the middle of the sides, and patent; these were before the leaves of the calyx: the seed is a single, covered nucleus, of an oval figure.

There seem to be four other sterile stamens, beside the four which have anthers on them.

There is only one known species of this genus, which is described by authors under the name of *Tribulus Aquaticus*, and *Tribuloides*.

T R A P A.

Water Caltrop.

The root of this singular plant is composed of a great number of oblong, slender bodies, partly swimming in the water, partly immersed in the mud at the bottom, and from different parts of these there grow several tufts of fibres, short and slender. From this there rise a number of leaves, in some degree resembling those of the poplar, an inch and half long, smooth on the upper side, rugose underneath, and standing on pedicles four or five inches long, hollow or fungous, and having a tuberosity a little above their insertion. The flowers grow on separate pedicles; they are small and white; the fruit is of the bigness of a small walnut, the kernel esculent.

It is frequent in many parts of Europe in standing waters, with muddy bottoms; but it is not a native of England. C. Bauhine calls it, *Tribulus aquaticus*. Tournefort, *Tribuloides vulgaris aquis innatus*.

Class the Fourth. Order the First.

Division the Fifth.

Tetrandria Monogynia, with tetrapetalous, incomplete flowers.

D O R S T E N I A.

THE calyx of the *Dorstenia* is double; the common involucrem is very large, plane, angulated, and covered with a common receptacle, which grows to it, and with very numerous and very small flowers growing on it's disk. The proper perianthium is quadrangular and hollow; it is immersed in the receptacle, and grows to it. There is no corolla: the stamens are four very small, filiform filaments; the anthers are roundish: the germen is roundish; the style is simple, and the stigma obtuse. There is no fruit; but the common receptacle becomes thick and fleshy: the seeds are single, roundish, and acuminate.

Of this genus there is only one known species; but, that from the variation of the leaves and receptacle in their different periods of growth, has been described under two names, as if two species.

D O R S T E N I A.

The Contrayerva Plant.

The root of the *Dorstenia* is oblong, of the thickness of a man's little finger, of an irregularly protuberant surface, and of a reddish-brown colour on the outside, and white within. It's texture is fibrous; it's taste extremely acid; it descends obliquely into the ground, and is furnished with a great number of large fibres. From this rise five or six leaves, each on it's separate pedicle: the pedicles are five inches long, round, and reddish; the leaves at first are of a kind of triangular figure, and only undulated at the edges; but afterwards they become more and more deeply sinuated, till at length they resemble those of the common *Spondylium*: they are four or five inches long, and nearly as much in breadth. Among these rise several pedicles, six or seven inches high, supporting each one common involucrem, with it's receptacle, and a multitude of flowers. The shape of this common involucrem varies also, as it is more or less mature; and is at some periods roundish, at others angular. It is very thick and fleshy, when mature, and the seeds are white.

This plant is a native of South America. Houston describes it twice, under it's two states of maturity, under the names of *Dorstenia dentarie radice*, *spondylii folio*, *placenta ovali*, and *Dorstenia dentarie radice*, *folio minus laciniato*, *placenta quadrangulari et undulata*. It's root is the *Radix Contrayervæ* of the shops. It is a noble sudorific and alexipharmic. It strengthens the stomach, dissipates flatulencies, and is excellent, in the form of the *lapis contrayervæ* of the shops, in fevers; and as a stomachic, infused in wine, in small quantities.

ISNARDA.

The calyx of the Isnarda is a campanulated perianthium, lightly divided into four acute, patent segments. There is no corolla: the stamina are four filaments, growing out of the middle of the cup; the anthers are simple. The germen is lodged within the substance of the cup; the style is simple, and longer than the stamina; the stigma is thick: the fruit is formed of the square base of the cup; it has four cells, and in them a few seeds of an oblong figure.

This genus comprehends the Dantia of Petit, and the glaucis, species 84. of Boccone. The characters render a farther description unnecessary.

ELÆAGNUS.

THE calyx of the Elæagnus is a perianthium, (consisting of a single leaf, very lightly divided into four segments, strait, campanulated, scabrous on the outside, coloured within, and deciduous: there is no corolla. The stamina are four very short filaments, inserted below the divisions of the calyx: the anthers are oblong, and incumbent: the germen is roundish, and placed below the receptacle: the style is simple, and a little shorter than the cup: the stigma is simple. The fruit is a drupe of an oval figure, obtuse, smooth, and punctated at the top, in which is an oblong, obtuse kernel.

Elæagnus foliis lanceolatis.

The lanceolated-leaved Elæagnus.

The root of this tree spreads a great way under the surface, and is formed of long and thick ramifications. The tree grows to fifteen or twenty feet high, and spreads it's branches every way to a considerable extent: the bark is whitish, rough, and cracked on the trunk; smooth, and often downy, on the young shoots. The leaves are an inch and half long, three quarters of an inch broad, and all over white, especially on the under side; they adhere to short pedicles, and stand irregularly on the branches; they are pointed at the ends, and soft to the touch. The flowers stand in the ax of the leaves; they are small and white; the fruit is like an olive, only smaller; it's pulpy part fungous, but well tasted.

This tree is common in Syria and Cappadocia, as also in Bohemia and Spain. C. Bauhine calls it, *Olea sylvestris folio molli incano*. Dodonæus, *Zizyphus Cappadocica*.

BRABEJUM.

THE Brabejum has no calyx. The corolla consists of four linear, obtuse petals, in their lower part erect, and forming a kind of tube; in the upper turned backward. The stamina are four capillary filaments, inserted in the angles of the petals, and scarce so long as the corolla: the anthers are small, and split sideways: the germen is very small and hairy; the style is filiform, of the length of the stamina, and somewhat thicker above than below; the stigma is simple. The fruit is a drupe of the drier kind, of an oval figure, and hairy; the kernel is oval.

There is but one known species of this genus. It is figured by Breynius in his Cent. f. 1. The characters are sufficient, without any farther distinction.

CAMPHOROSMA.

THE calyx of the Camphorosma is formed of a single leaf, and is of a hollowed, bellied, and urceolar figure, with two opposite and alternate, very small teeth. The corolla is incomplete; the stamina are four slender filaments; the anthers are roundish; the germen is oval; the style is short, and the stigma capitated. The fruit is a small capsule, containing only a single seed.

The shape of the calyx in this plant, and the capsule containing but one seed, sufficiently distinguish it from all the others of this class.

RIVINA.

THE calyx of the Rivina is a permanent perianthium, coloured and divided into four parts: the segments are of an oblong, oval figure, and obtuse: there is no corolla. The stamina are four filaments, shorter than the cup, and permanent; the anthers

anthera is small: the germen is large and roundish; the style is very short: the stigma is simple and obtuse. The fruit is a globose berry, containing only one cell, and standing on a green, reflex cup: the seed is single, roundish, compressed, and scabrous.

This genus comprehends the Rivina of Plumier, the Solanoides of Tournefort, and the Phytolacæ species of Boerhaave. Plumier very erroneously figures eight stamina in the flower. There is only one known species of it.

RIVINA.

The Rivina is a very luxuriant tree, pushing out a vast number of long branches: its root is formed of a number of long ramifications. Its stem covered with a pale, brown bark; its smaller branches with a green one. Its leaves remain fresh all the winter; they are oblong, broad, and pointed at the end, two inches, or more, in length, and near an inch and half in diameter, hoary and soft to the touch. The flowers are coloured, though there is no corolla: the berries, when ripe, afford a rich purple juice, that stains every thing it touches.

The tree is a native of Barbadoes, Jamaica, and many other of the islands thereabout. Tournefort calls it, *Solanoides Americana coccææ foliis canescentibus*. Commelin, *Amaranthus baccifer coccææ foliis*.

SALVADERA.

THE calyx is a perianthium, formed of a single leaf, divided into four revolute segments; there is no corolla. The stamina are four filaments, of the length of the cup: the antheræ are roundish, and furrowed, resembling, in some degree, a purse. The germen is round; the style is simple and short; the stigma is obtuse and umbilicated: the fruit is a round berry, containing only one cell, in which is inclosed a single, round seed, inclosed in a spotted, callous skin.

There is but one known species of this genus.

SALVADERA.

The root is divaricated and spreading, the trunk woody; the bark is of a greyish brown, and full of cracks. It sometimes grows to the size of a moderately large tree, but more usually it is a shrub of eight or ten feet high; the leaves stand usually in pairs; they are oblong and laucolated, two inches in length, and about an inch in breadth; they are of a bright green, and often spotted with black. The flowers stand in clusters, and are of a pale, yellowish colour.

It is a native of the East. The shores of the Persic gulph abound with it. The natives use its leaves, as a remedy, for the bite of the scorpion.

ALCHEMILLA.

THE calyx of the Alchemilla is a permanent perianthium, formed of one leaf, subuluted and divided at the extremity into eight segments, alternately larger and smaller: there is no corolla. The stamina are four very small, erect, subuluted filaments, inserted in the rim of the cup: the antheræ are roundish; the germen is oval; the style is filiform, and of the length of the stamina; it is inserted at the base of the germen: the stigma is globose. There is no fruit: but the neck of the calyx shuts, and it contains a single seed of an elliptic figure, and somewhat compressed.

1. *Alchemilla foliis palmatis.*

The palmated-leaved Alchemilla.

Common Ladies
Mantle.

The root of this species is oblong, of the thickness of one's little finger, and furnished with a number of fibres; of an astringent and acerb taste. The radical leaves stand on pedicles of two or three inches long; they are of a somewhat roundish figure, but sinuated, deeply plicated, and of a pale yellowish-green colour, and an inch and half in diameter. The stalks are eight or ten inches long, round, thick, but not erect: the leaves on these are like the radical ones, but smaller, and with very short pedicles. The flowers are small, and stand in a kind of umbels; they are of a greenish-yellow.

This is a native of England; I found it this summer in some low grounds in Lincolnshire. C. Bauhine calls it, *Alchemilla major vulgaris*. Linnaeus, *Alchemilla foliis simplicibus*. As it grows in more wet, or more dry, places, its leaves are more or less hairy.

2. *Al-*

2. *Alchemilla foliis digitatis.*
Digitated-leaved Alchemilla.

Cinquefoil Ladies
Mantle.

The root of this elegant little plant is oblong, slender, blackish, and furnished with many fibres. The radical leaves stand on pedicles of three inches long; they are half an inch in diameter, and are divided, down to the pedicle, into five parts, and these serrated at their edges: they are of a bright green on the upper side, and of a silvery white underneath. The stalks are four or five inches long, round, whitish, and procumbent; on these stand leaves like the radical ones, but smaller, formed of fewer segments, and without those long pedicles, and at their tops stand clusters of little greenish-white flowers.

This is a native of England, but is a very scarce plant with us. I have met with it on the hills in the northern counties. Ray calls it, *Alchemilla Alpina pentaphyllæa*. C. Baubine, *Tormentilla Alpina folio sericeo*; and Tournefort, *Alchemilla quinquefolia folio subtus argenteo*.

The other species of *Alchemilla* are, 1. The cinquefoil *Alchemilla*, with fimbriated lobes. 2. The narrow-leaved, erect *Alchemilla*. 3. The narrow-leaved, procumbent *Alchemilla*.

Class the Fourth Order the Second.

TERANDRIA DIGYNIA.

Plants which have four stamina and two styles in each flower.

A P H A N E S.

THE calyx of the *Aphanes* is a permanent perianthium of a tubulated figure, consisting of a single leaf, divided into eight segments at the edge, and those alternately larger and smaller: there is no corolla. The stamina are four erect, subulated filaments; they are very small, and are inserted in the rim of the calyx: the anthers are roundish. The germina are two, and of an oval figure: the styles are capillary, of the length of the stamina, and inserted into the germina at the base: the stigmata are capitated. There is no fruit, but the calyx closes at the mouth, and contains two oval, acuminate seeds, compressed, and of the length of the style.

This genus approaches greatly to the *Alchemilla*, but is evidently distinct in the pistil. There is only one known species of it.

A P H A N E S.

Parsley Pierc.

The root of this little plant is oblong, small, and simple, and furnished with several fibres. The stalks rise five or six together; they are three inches long, round, hairy, and procumbent: the leaves stand very thick upon them; they are roundish, but divided, as it were, into three parts, and those deeply serrated at their edges. All along the branches stand clusters of small, greenish-white flowers, arranged into a double series. The whole plant is of a greyish, or whitish-green, colour.

It is extremely common in our corn-fields. Dillenius and others call it, *Perceper Anglorum*. Columna, *Alchemilla Alpina minor*; and C. Bauhine, *Chærophylo non-nihil accedens*.

H A M A M E L I S.

THE calyx of the *Hamamelis* is an erect perianthium, consisting of four equal, oblong, and obtuse leaves. The corolla consists of four linear, equal, and very long petals: the stamina are four subulated filaments, of the length of the calyx; the anthers are simple: the germen is oval and hairy. The styles are two in number, and of the length of the stamina: the stigmata are simple. The fruit is a bivalve capsule, containing two cells: the seed is a single nucleus, of an oblong, oval figure, and smooth surface.

This is an American, described by Gronovius in his *Flora Virginea*. The characters sufficiently distinguish it, without a farther description.

CUS-

CUSCUTA.

THE calyx of the Cuscuta is a perianthium, formed of one leaf, of a cyathiform figure, obtuse, lightly divided into four segments, and fleshy at the base. The corolla consists of a single petal, of an oval figure, a little longer than the cup, and divided lightly into four obtuse segments at the mouth: the stamina are four subulated filaments, of the length of the cup; the antheræ are roundish; the germen of the pistil is roundish; the styles are two, erect and short; the stigmata are simple; the pericarpium is roundish, fleshy, and formed into two cells, opening horizontally; the seeds are two in number.

This genus comprehends the Cuscuta of authors, and the Basella of the Hortus Malabaricus; the Basella, indeed, produces a single seed, naked, and placed in a succulent, baccated calyx; the flower is sometimes divided into six segments, and the style in that case is triple.

1. *Cuscuta nuda repens filiformis.* Dodder.
The filiform, naked, creeping Cuscuta.

The root of this singular plant consists of a number of short fibres: from this rise several naked, round, reddish stalks, which twist themselves about any plant that is near them: as soon as these are well fastened to the plant, the root in the earth dies away, and the whole plant is afterwards fed by the juices of that it has seized upon; these stalks continue always naked of leaves; but they send out, at different parts, clusters of fibres, which pierce the bark of the other plant, and thence take in their nourishment. The flowers stand in clusters, on several parts of the stalks; they are hollow, small, and of a pale reddish, or whitish, colour.

This plant is common in England, and in all other parts of Europe, and has been called by different names, according to the different plants it has been found about, as *Epurtica*, *Eperica*, and *Epithymum*; the last is still, by many, supposed a distinct species, but erroneously.

The Cuscuta has been celebrated as a cathartic, but it is a very languid one, and is now out of use.

HYPECOUM.

THE calyx of the Hypocoom is a small perianthium, formed of two leaves, which are of an oval, acute figure, and stand erect, and opposite to one another, and are deciduous. The corolla consists of four petals; the two exterior petals are broad, trilobated, and obtuse, and are placed over against one another; the two interior ones stand alternately with the others: they are lightly divided into three segments, of which the middle one is hollow, compressed, and erect. The stamina are four erect, subulated filaments, covered by the segments of the two inner petals; the antheræ are erect and oblong; the germen is oblong and cylindric; the styles are two, and are very short: the stigmata are acute. The fruit is a long, compressed pod; the seeds are of a roundish figure, but compressed, and are placed singly in the articulations of the pod.

1. *Hypocoom filiquis arcuatis, compressis, articulatis.*
The Hypocoom, with crooked, compressed, articulated pods.

The root is oblong and slender, sometimes bifid, sometimes simple, and of a yellowish-brown colour: the radical leaves stand on moderately long pedicles; they are variously divided, and, in some degree, resemble those of the fumaria: the stalks are procumbent, and somewhat compressed, and run up naked a great way, but, toward the top, where the flowers appear, they have leaves, like the radical ones, but smaller, and without those long pedicles. The flowers are small and yellow: the pods are long, and bent like a sickle: the seed is black.

This is not a native of England, but it is common in most other parts of Europe. C. Bauhine calls it, Hypocoom; J. Bauhine, Hypocoon filiquosum; others, Cuminum filiquosum.

2. *Hypocoom filiquis pendulis, teretibus, equalibus.*
The Hypocoom, with cylindric, equal, pendulous pods.

The root of this species is oblong and slender: the radical leaves are supported on pedicles of two inches long, and resemble those of the carui plant: the stalks are, five

or six inches high, and, though very slender, they stand erect; they have leaves on them, like the radical ones, but less divided, and on short pedicles. The flowers are moderately large, and yellow: the pods are strait, and hang downwards, on rigid pedicles.

This is a native of many parts of Germany, and Italy. Tournefort calls it, *Hypecoccin tenuiore folio*; Dalechamp, *Cuminum silvestre filiquatum Ponce*.

3. *Hypecoccum filiquis erectis, teretibus, torulosis.*
The Hypecoccum, with erect, rounded, torulated pods.

The root of this species is oblong, slender, and whitish: the radical leaves stand on long pedicles, and are very finely divided: the stalks are round and smooth: the leaves on them are very fine and small; the flowers are yellow, and nearly of the breadth of a shilling: the pods stand on short, rigid pedicles, and are erect, rounded, and knotty, each protuberance containing a single, yellow seed.

This is a native of Russia. Amman calls it, *Hypecoccum tenuifolium filiquis erectis teretibus*.

Class the Fourth. Order the Third.

TETRANDRIA TETRAGYNIA.

Plants which have in each flower four stamina and four styles.

I L E X.

THE calyx of the Ilex is a very small, permanent perianthium, divided into four segments at the verge: the corolla consists of a single, plane petal, divided into four large, roundish, hollow, patent segments, cohering only at the ungues: the stamina are four subulated filaments, shorter than the corolla: the anthers are small; the germen is roundish: there is no style, but there are four roundish stigmata: the fruit is a roundish berry, containing four cells: the seeds are single, osseous, oblong, and obtuse, gibbous on one side, and angulated on the other.

This genus comprehends the Aquifolium of Tournefort, and the Dodonaea of Plumier; only the Dodonaea excludes a fourth part of the number in all the parts of fructification. The tree, commonly called Ilex, is of the oak kind, and has no place here, nor any right to a generical name distinct from Quercus.

Ilex foliis ovatis, acutis, spinosis.
The Ilex, with oval-pointed, prickly leaves.

Common Holly.

The common Holly is an ever-green shrub, usually rising to eight or ten feet high, sometimes growing to a tree. The branches are very flexible and tough; the bark is greyish on the trunk, and greenish on the branches; the leaves are of an oblong, oval figure, prickly at the points, and about the edges: the flowers are small, and of a greyish-white; the berries, which succeed them, are green at first, but red, when ripe.

The Holly is a native of England, and almost all other parts of Europe. C. Bauhine calls it, *Ilex aculeata baccifera folio serrato*; others, *Agrifolium*, and *Aquifolium vulgare*. Tournefort mentions what he calls ten species of Holly, but they are only varieties of this common kind, with variegated leaves, and other variations, owing to accident or to culture.

R U P P I A.

THE calyx of the Ruppia consists of a small and thin spatha, scarcely distinguishable from the vagina of the leaves: the spadix is subulated, strait, simple, and, when the fruit is ripe, becomes crooked, and is furnished with fructifications, placed in a double series. There is no corolla, nor any filaments, but a number of sessile anthers, of a kidney-like shape, bivalve, and fixed longitudinally: the pistil consists of four thin, capillary styles, each having an oval germen, and a simple stigma: the fruit consists of four oval, cortical substances, pointed, oblique, standing on the elongated styles, and in each is contained a single, roundish seed.

This very singular genus comprehends, so far as is yet known, only one species.

RUPPIA.

RUPPIA.

The *Ruppia* is an aquatic plant. Its root is long and creeping, of the thickness of a crow-quill, and jointed; the joints are about a third of an inch distant, and at every one it sends down a fibre into the mud, and a stalk upwards in the water: the stalk is single, round, and slender: the leaves stand alternately; they are three inches long, very narrow, and grassy; large and hollow at the base, where they surround the stalk, and, more or less, sharp at the point. The plant rises to six or eight inches high; the leaves stand at an inch and a half distance: from the axis of every leaf there grows a branch, furnished with two or three other such leaves, and with the fructifications: the styles supporting the germs are near an inch long.

It loves salt-water ditches. I have met with it on Canvey Island in Essex, and Sheppey in Kent. Ray calls it, *Potamogeton maritimum pusillum*; C. Bauhine, *Fucus feniculi folio longior*; and Gramen *maritimum fluitans cornutum*. Plukenet, *Potamogeton fructu fere umbellato*; Micheli, *Bucca ferrea*.

POTAMOGETON.

THE *Potamogeton* has no calyx: the corolla consists of four roundish, obtuse, hollow, patent, and unguiculated petals: the stamina are four very short, plane, obtuse filaments: the anthers are short, and didymous: the germina are four, and of an oval, acuminate figure: there are no styles: the stigmata are obtuse: there is no pericarpium: the seeds are four in number, roundish, and acuminate, gibbous on one side, and compressed and angulated on the other.

1. *Potamogeton foliis oblongo-ovatis, petiolis natantibus.* Broad-leaved
The oblong, oval-leaved *Potamogeton*. Pond-Weed.

The root of this is long and creeping, of the thickness of a quill, white, and jointed; from every joint there descend fibres into the mud, and stalks rise upwards; these stalks are very long, round, jointed, branched, and extend themselves to the surface of the water; at every joint of the stalk stands a leaf; those immersed in the water are narrow and grassy; those which float on the surface are broad, oblong, and oval, of a brownish-green colour, and somewhat like the leaves of plantain, but broadest at the base, and terminating in an obtuse point; these stand on pedicles of four or five inches long: at that part of the stalk from whence the spike of flowers grows, there are two leaves, placed opposite, and, at the origin of each, is a thin, pellucid membrane, of a pointed figure; this stands within the axis of the pedicle, and surrounds the spike, while young: the spike, when full grown, is two or three inches long: the flowers are small and yellowish.

This is very frequent in our ponds and ditches. C. Bauhine calls it, *Potamogeton rotundifolium*; J. Bauhine, *Potamogeton rotundiore folio*; others, *Fontalis major vulgaris*.

2. *Potamogeton foliis cordatis amplexicaulibus.* Perfoliate
The *Potamogeton*, with cordated leaves surrounding the stalk. Pond-Weed.

The root is long, creeping, white, and jointed: the stalk is round, tender, and often three or four feet long: the leaves stand alternately; they are broad at the base, and surround the stalk; from thence they gradually grow smaller to the point; they are thin, pellucid, and of a shining surface, and are ribbed longitudinally, as those of the plantain are: where the spike of flowers is inserted, there are two leaves, placed opposite to one another: the spike is short, and is supported on a thick pedicle, an inch and a half long: the flowers are small and yellowish.

This is common in ponds, where it usually makes it's way up to the surface. Ray calls it, *Potamogeton perfoliatum*; C. Bauhine, *Potamogeton foliis latis splendidibus*.

3. *Potamogeton*

3. *Potamogeton foliis linearibus obtusis, caule compresso.*
Grassy, obtuse-leaved Potamogeton, with flat stalks.

The root of this species is composed of a cluster of fibres: the stalk grows to two or three feet in length, immersed all the way in water: it sends out many branches, and is slender, and somewhat compressed; at every joint stands a leaf, grassy, long, and thin, but terminating obtusely, not in a point; each leaf has three longitudinal ribs, and also a pellucid, thin membrane at its base: the leaves stand alternately, except, where the spikes of flowers are inserted, there they stand opposite: the spike is short, the flowers small and greenish, but with a little redness towards the center.

This is common in our rivers. Ray calls it, *Potamogeton caule compresso, folio graminis canini*.

The other species of the *Potamogeton* are, 1. The long and broad, acute-leaved *Potamogeton*. 2. The long, serrated-leaved *Potamogeton*. 3. The branched, narrow-leaved *Potamogeton*. 4. The narrow, undulated-leaved *Potamogeton*. 5. The many-leaved, grassy *Potamogeton*. 6. The little, round-stalked, grassy-leaved *Potamogeton*. 7. The curled-leaved *Potamogeton*. 8. The narrow, undulated-leaved *Potamogeton*.

SAGINA.

THE calyx of the *Sagina* is a perianthium, composed of four oval, hollow, patent, and permanent leaves: the corolla consists of four oval, obtuse, patent petals, shorter than the calyx: the stamina are four capillary filaments: the antheræ are roundish; the germen is globose; the styles are four, subulated, bent backward, and hoary: the stigmata are simple: the fruit is an oval, covered capsule, formed of four valves, and contains four cells: the seeds are numerous, very small, and affixed to the receptacle.

This genus comprehends the *Alfinella* of Dillenius, and some of the *Alfines* of other authors.

1. *Sagina scopis unifloris.* Smooth, Spring
The Sagina, with one flower on the stalk. Chickweed.

The root of this beautiful little plant is composed of a tuft of white, short, and slender fibres: from this rise six or eight leaves, a quarter of an inch long, not half so much in breadth, broadest at the base, terminating in a point, smooth and glossy on the surface, and even at the edges: among these rises a stalk, two or three inches high, slender, round, and smooth; at every joint of this stand two leaves, like the radical ones, and without pedicles; at the top stands a single flower, large in proportion to the plant, and very beautiful, of a snow white.

This is frequent in spring in Hyde-park, and on Black-heath, &c. Magnol, and others, call it *Alfine verna glabra*.

2. *Sagina ramis procumbentibus.*
The procumbent-branched Sagina.

The root of this species is composed of a few, white, capillary fibres: the radical leaves are half an inch long, very narrow, smooth on the surface, and are disposed in a radiated form on the ground. The stalks grow to four or five inches long; they are very slender, procumbent, and jointed; the leaves on them are shorter than the radical ones, and narrow and smooth. The flowers stand singly, on short pedicles, arising from the axæ of the leaves; they are very small, milk-white, and fall off very soon.

This is frequent about Paris, but we have it not in England. Tournefort calls it, *Alfine minima flore sagaci*; Dillenius, *Alfinella muscosa flore repens*.

COLDENIA.

COLDENIA.

THE calyx is a perianthium, composed of four leaves: the corolla is of the infundibuliform kind, and is composed of four oblong petals: the stamina are four slender filaments; the antheræ are moderately large, and tumid; the germen is quadrifid; the styles are four, and short; the fruit is composed of four seeds.

There is but one known species of this genus; it is a native of North America, and is too sufficiently characterized by this fructification, to need any farther description.

Class the Fifth.

PENTANDRIA.

Plants which have in every flower five stamina.

OF this class some have only one style, some two, some three, some four, some five, and some yet more. The genera comprehended under it are thence arranged into six orders, according to the number of the styles; under each of which, being also very numerous, they will be again disposed, according to certain common and obvious characters, into a number of divisions.

Class the Fifth. Order the First.

PENTANDRIA MONOGYNIA.

Plants which have in each flower five stamina and one style.

OF this order there are little less than a hundred genera, one set of which have monopetalous flowers, succeeded each by four seeds; another have monopetalous flowers, with the capsules contained within them; a third have monopetalous flowers, with the germen placed below the flower; a fourth have declinated stamina; a fifth have monopetalous flowers, with berries placed above the receptacle; and, finally, a sixth have polypetalous flowers. These are arranged separately under so many divisions.

Class the Fifth. Order the First.

Division the First.

Pentandria Monogynia, with monopetalous flowers, succeeded by four seeds each.

The Herbe Asperifoliæ, in general, of Ray.

HELIOTROPIMUM.

THE calyx of the Heliotropium is a permanent perianthium, formed of one leaf, tubulated, and divided into five parts at the edge; the corolla consists of a single petal; the tube is of the length of the cup; the limb is plane, divided lightly into five segments, and obtuse: the smaller segments stand alternate, and are acute; the larger are placed between; the mouth is closed by five prominent squamulæ, which, bending toward one another, form a little star: the stamina are five very short filaments, placed in the mouth of the flower; the antheræ are small, and covered: there are four germina; the style is capillary, and of the length of the stamina; the stigma is emarginated: there is no pericarpium; the calyx remains unaltered; and contains four oval, acuminate seeds.

1. *Heliotropium foliis ovatis integerrimis, spicis conjunctis.*
The oval, whole-leaved Heliotrope, with conjunct spikes.

The root is oblong; single, hard, and whitish: the stalk is round, fungous, white, and downy. It grows to six or eight inches high: the leaves stand simple; they are of a roundish, but somewhat oblong, figure, an inch in length, and more than three quarters of an inch in diameter, when largest; but often not a third part so large: they are even at the edges, but hoary and white, as the stalk. From the side of every leaf grows a branch, and, at the tops of these, as well as of the main stalk, stand long and slender spikes of flowers, the tops of which turn inward, in the manner of those of the myosotis, and other plants, called scorpion-tailed ones: the flowers are small and white, and are arranged very close to one another.

This is not a native of England, but it is frequent in most other parts of Europe, C. Bauhine calls it, *Heliotropium majus* Dioscoridis; J. Bauhine, *Heliotropium majus flore albo*.

2. *Heliotropium floribus glomeratis.*
The cluster-flowered Heliotrope.

The root of this species is composed of a cluster of white, rigid fibres: the radical leaves stand on moderately long pedicles; they are oblong, broad, obtuse, and hoary, soft to the touch, and white: the stalk is procumbent, and full of branches; it grows to five or six inches long; the leaves on it are somewhat shorter than the radical ones, approaching more to roundness; they are very white and hoary. The flowers are large, and very numerous; they stand at the extremity of the stalk, in a kind of glomerated clusters: they are sweet, and soon fall.

This is a native of Sicily. Boccone calls it, *Heliotropium majus flore amplo odorato*.

The other species of the Heliotrope are, 1. The little, procumbent Heliotrope, 2. The blue, clary-leaved Heliotrope. 3. The narrower-leaved, blue, clary-like Heliotrope. 4. The narrow-leaved, glaucous Heliotrope. 5. The shrubby, woolly, sea Heliotrope.

The plant, called *Heliotropium tricoctan*, is not of this class, but is described in it's place.

MYOSOTIS.

THE calyx of the myosotis is an oblong, erect, acute, and permanent perianthium; divided into five short segments at the extremity: the corolla consists of a single petal; the tube is cylindric and short; the limb is plane, and lightly divided into five segments; the segments are emarginated and obtuse, and the opening of the flower is closed by five convex, prominent squamulae, which bend toward one another: the stamina are five very short filaments, placed in the neck of the tube: the antherae are small, and covered; the germina are four; the style is filiform, and of the length of the tube of the corolla; the stigma is obtuse; the cup becomes larger afterwards, and is erect, and contains in it's cavity four oval, acuminate, smooth seeds.

1. *Myosotis foliorum apicibus callosis.* Mouse-ear
The Myosotis, with callous apices to the leaves. Scorpion-grass.

This is a plant which sometimes grows in barren, dry grounds, and sometimes in the mud, about shallow waters, or the edges of rivers, &c. in these two states it makes so very different an appearance, that all the botanical writers, till Linnæus, have described it under two names, *Myosotis palustris*, and *Myosotis arvensis*, as two species; but the one, carried to the place of growth of the other, soon shews the difference, however, to be merely accidental. The root consists of a number of white fibres; the radical leaves are an inch long, a third of an inch broad, and terminate in an obtuse point; the stalks are round and hairy; thick, when in a wet soil; slender, when in a dry one: they grow to six, eight, or more inches in length; the leaves stand alternately on them, and are like the radical ones; the flowers stand in long spikes, curled up at the extremity,

cremity. When in wet places, they are large, and of a beautiful blue colour; when in dry ones, much smaller; usually blue, but sometimes yellow.

The plant is frequent with us in both it's states, and is described under them by C. Bauhine, under the names of *Echium scorpioides palustre*, and *Echium scorpioides arvense*. Ray calls it, *Myofotis scorpioides palustris*, and *Myofotis scorpioides arvensis*; and Tournefort, *Lithospermum palustre*, and *Lithospermum arvense minus*.

2. *Myofotis feminibus echinatis.*

Echinated-seeded Myofotis.

**Little, blue
Hound's tongue.**

The root is oblong, slender, black, and of a sweet taste; the radical leaves are oblong, narrow, white, hoary, and pointed. The stalk is slender, hairy, angular, and eighteen inches high; the leaves stand alternately on it, at very small distances, so that it is, in a manner, covered with them; they are shaped like the leaves of gromwell, oblong, somewhat broad, pointed, and soft to the touch; they are covered with very long hairs. The stalk is divided into four or five ramifications; toward the top these stand obliquely, and are long, slender, and curled up at the ends; the lower part of these is thick-set with small, alternate leaves; the upper part with flowers, placed also alternately; they are small, but of a beautiful colour.

This is not a native of England, but is frequent in many other parts of Europe. Linnaeus calls it, *Myofotis feminibus aculeatis triglochidibus*; C. Bauhine, *Cynoglossum minus*; Tournefort, *Buglossum femine echinato*.

LITHOSPERMUM.

THE calyx of the *Lithospermum* is a permanent perianthium, oblong, and divided into five subulated and hollowed segments: the corolla consists of a single petal, of the length of the calyx; the tube is cylindric; the limb lightly divided into five segments, obtuse and erect; and the mouth open; the stamina are five very short filaments; the anthers are oblong, and appear in the mouth of the corolla; the germina are four; the style is filiform, and of the length of the tube of the corolla; the stigma is obtuse and bifid; there is no pericarpium, but the cup becomes patulous and loog, and contains four hard, oval, acuminate seeds.

1. *Lithospermum feminibus laevibus, corollis vix calycem
superantibus.*

*The smooth-seeded Lithospermum, with corolla scarce
longer than the cup.*

Common

Gromwell.

The root is perennial, of the thickness of a finger, woody, and furnished with many fibres; the stalk is round, hard, rigid, rough to the touch, and two or three feet high; it is divided toward the top into a number of branches, and is beset with leaves, alternately placed, at small distances, of a dusky green colour, two inches long, an inch broad, and terminating in a sharp point; they have no pedicles, and those placed toward the top of the stalk are broader, in proportion to their length, than the rest: the flowers stand all along the upper part of the branches; they are small and white: the seeds are whitish, and very glossy.

This is frequent with us, by road-sides, and in dry fields. C. Bauhine calls it, *Lithospermum majus erutum*; others, *Lithospermum vulgare*.

2. *Lithospermum feminibus rugosis, corollis vix calycem
superantibus.*

*The rough-seeded Lithospermum, with corolla scarce longer
than the cups.*

Barb'd

Alkanet.

The root is annual; it is simple, oblong, reddish, and woody. The plant grows to a foot, or more, in height: the stalk is round, thick, rough to the touch, and, at the top, is divided into three or four branches: the leaves are an inch and a half long, half an inch broad, of a pale green colour, hairy, and soft to the touch. The flowers stand on short pedicles, in the size of the leaves; they are white and small; the seeds are rugose.

This

This is very common in our corn-fields, in May. C. Bauhine calls it, *Lithospermum arvense radice rubra*; others, *Anchusa degener facie mili folia*, and *Anchusa sylvestris*.

ANCHUSA.

THE calyx is an oblong, cylindric, acute perianthium, divided into five segments, and permanent: the corolla consists of a single petal; the tube is cylindric, and of the length of the cup; the limb is lightly divided into five segments, erecto-patent, and obtuse; the opening is closed by five oblong, convex, prominent, and connivent squamule; the stamina are five very short filaments, placed in the mouth of the corolla; the antheræ are oblong, incumbent, and covered: there are four germina; the style is filiform, and of the length of the stamina; the stigma is obtuse, and emarginated; the cup becomes larger, and serves as a fruit, containing in its cavity four oblong, obtuse, and gibbous seeds.

This genus comprehends the *Anchusa* of authors, and the *Buglossum* of Tournefort and others.

1. *Anchusa foliis linearibus.* *Linear-leaved Anchusa.*

**Narrow-leaved
Alkanet.**

The root is oblong, thick, and of a reddish colour. The plant grows to two feet high; the stalks are rigid and woody, smooth in the lower part, but hairy toward the top; the leaves are an inch, or more, in length, very narrow, and pointed at the end, much resembling the leaves of the common rosemary: the flowers stand on the upper parts of the branches, and are small, and of a purple, sometimes a bluish, colour.

This is not a native of England, but it is frequent in France and Italy. C. Bauhine calls it, *Anchusa angustifolia*; Lobel, and others, *Anchusa lignosior angustifolia*.

2. *Anchusa foliis cuneiformibus.* *The Anchusa, with cuneiform leaves.*

**Broad-leaved
Alkanet.**

The root is oblong, a third of an inch in diameter, and of a red colour: the radical leaves are two inches long, hairy, and a third of an inch broad at the top, whence they grow gradually smaller to the base; the stalk rises to eight or ten inches high, and is round, thick, and hairy: the leaves stand alternately on it, and are in shape like those of the root, and covered with long hairs: the flowers stand in clusters, about the tops of the branches; they are small, and of a bright purple colour: the seeds are large, and greyish.

This is a native of many parts of Europe, but not of England. C. Bauhine calls it, *Anchusa minor puniceis floribus*; J. Bauhine, *Anchusa Monspeliensis*.

3. *Anchusa foliis lanceolatis spicis, imbricatis.* *The lanceolated-leaved Anchusa, with imbricated spikes.*

**Common
Bugloss.**

The root is thick, black, and hard, and lives many years. The radical leaves are oblong, broad, and pointed at the extremity: the stalk grows to two feet high, and is round and hairy: the leaves stand irregularly on it, and very near one another; they are oblong, narrow, and of a bluish-green colour; they terminate in a sharp point, are hairy on both sides, and even at the edges: the tops of the main stalk and branches sustain numbers of flowers, which are small, blue, or reddish, and quickly fall off; the tops of the branches curl up, before the flowers open, and are often red.

It is a native of some parts of Germany; we have it only in gardens. C. Bauhine calls it, *Buglossum angustifolium minus*; J. Bauhine, and others, *Buglossum vulgare*.

The other species of *Anchusa* are, 1. The borrag-leaved, ever-green *Anchusa*. 2. The sinuated-leaved *Anchusa*. 3. The great, black-flowered *Anchusa*. 4. The great, Cretic *Anchusa*. 5. The little, field *Anchusa*, called wild Bugloss. 6. The bullated, Cretic *Anchusa*. 7. The narrow-leaved, dentated *Anchusa*. 8. The gromwell-leaved, shrubby *Anchusa*. 9. The little, yellow-flowered *Anchusa*. 10. The long and narrow-leaved *Anchusa*. 11. The hoary, sea *Anchusa*. 12. The procumbent, acalous *Anchusa*. 13. The tree *Anchusa*. 14. The tall, narrow-leaved *Anchusa*; and, 15. The yellow-flowered, oriental *Anchusa*.

CYNOGLOSSUM.

CYNOGLOSSUM.

THE calyx is an oblong, acute, permanent perianthium, divided into five segments at the edge; the corolla consists of a single petal, of the length of the cup; the tube is cylindric, and shorter than the limb, which is lightly divided into five segments, and obtuse; the mouth of the corolla is closed up by five convex, prominent, and connivent squamulae; the stamina are five very short filaments in the mouth of the corolla; the anthers are roundish and naked; the germina are four; the style is subulated, and of the length of the stamina; the stigma is emarginated, and the style is permanent; the fruit consists of four roundish, scabrous, depressed capules: the seeds are single, of an oval figure, gibbous, acuminate, and smooth. The essential character is in the four monospermous capules, with the permanent style.

This genus comprehends the *Cynoglossum*, and the *Omphalodes* of authors.

1. *Cynoglossum foliis lanceolato-ovatis, corollis calycem
equantibus.*

**Common Hound's-
tongue.**

*The Cynoglossum, with ovato-lanceolate leaves, and
corollae of the size of the cup.*

The root is thick, large, and black on the outside, white within, of a disagreeable smell, and sweetish taste. The radical leaves are six or eight inches long, and an inch or two in breadth, of a blue green colour, soft to the touch, and full of large ribs. The stalk rises to two feet high; it is round, hairy, and thick-set with leaves, which are long, narrow, and pointed at the ends; of a strong smell, and pale glaucous colour. The top of the stalk is divided into several branches, and on these stand long series of flowers, small, and of a dusky reddish colour.

It is common with us in barren places, and by way-sides. C. Bauhine calls it, *Cynoglossum majus vulgare*. J. Bauhine and others, *Cynoglossum vulgare*. Its root is kept in the shops, and is esteemed a pectoral and narcotic.

2. *Cynoglossum flaminibus corollam equantibus.*

**Great Northern
Hound's-tongue.**

The Cynoglossum, with stamina as long as the corolla.

The root is thick, long, black on the outside, and biennial. The radical leaves are a foot long, very soft, of a pale glaucous colour, three inches broad, and terminate in a point. The stalk rises to three feet high; the leaves stand irregularly, and very thick on it; they are whitish, oblong, and pointed: the flowers are placed in long series, on the tops of the branches; they are moderately large, of a fine deep purple, and have the stamina so long, that they rise to the top of the corolla, or a little beyond it.

It is a native of Italy. Columna calls it, *Cynoglossa montana maxima frigidarum regionum*.

3. *Cynoglossum corollis parvis, foliis angustioribus.*

**Green-leaved
Hound's-tongue.**

The small-flowered, narrow-leaved Cynoglossum.

The root is long, and black on the surface. The radical leaves are six inches long, narrow, of a bright green colour, and soft to the touch: the stalk rises to three feet high, and is green, hollow, round, hairy, and branched. The leaves stand thick on it; they are oblong and narrow, of a deep green on the upper surface, and white underneath, soft to the touch, and somewhat hairy. They have not the rank smell of the common Hound's-tongue: the flowers are small and of a dusky ferrugineous-red.

This is a native of England, but is not common. I have met with it, near Thorsdon, in Essex. C. Bauhine calls it, *Cynoglossum sempervirens*. J. Bauhine, *Cynoglossa folio virente*.

The other principal species of *Cynoglossum* are, 1. The great Belgic *Cynoglossum*. 2. The large-flowered, green-leaved *Cynoglossum*. 3. The clustered-flowered *Cynoglossum*. 4. The umbellated *Cynoglossum*. 5. The great, broad-leaved, stinking, Cretic *Cynoglossum*. 6. The narrow, silver-leaved, Cretic *Cynoglossum*. 7. The Spanish, gromwel-leaved *Cynoglossum*. 8. The woolly-cupped, oriental *Cynoglossum*.

sum. 9. The echium-leaved, oriental Cynoglossum. 10. The plantain-leaved Cynoglossum; and 11. The bugloss-leaved Cynoglossum. To these we are to add three others, called by authors Omphalodes: 1. The flax-leaved Cynoglossum. 2. The tall, larger-leaved Cynoglossum. 3. The comfrey-leaved, vernal Cynoglossum.

SYMPHYTUM.

THE calyx of the Symphytum is an erect, acute, pentangular, permanent perianthium, divided into five parts at the edge: the corolla consists of a single petal, formed into a very short tube, and a tubulated, ventricose limb, somewhat thicker than the tube, and divided into five segments at the edge, obtuse and reflex. The opening is furnished with five subulated rays, shorter than the limb, and connivent, so as to form a cone. The stamina are five subulated filaments, placed alternately with the radii of the aperture: the antheræ are acute, erect, and covered; the germina are four; the style is filiform, of the length of the corolla; the stigma is simple. There is no pericarpium, but the calyx grows larger, and contains four gibbous, pointed seeds, placed with their apices connivent.

This genus comprehends the Symphytum of Tournefort, and the Consolida of Rivinus.

1. *Symphytum foliis ovato-lanceolatis.*

The Symphytum, with ovato-lanceolate leaves.

**Common
Comfrey.**

The root is oblong, irregularly shaped, an inch thick, black on the outside, white within, and extremely viscous. The radical leaves are a foot long, three or four inches broad in the middle, even at the edges, rough to the touch, of a pale green, and terminate in a point. The stalk grows to two feet, or more, in height; the shape is round, but it is edged with membranes from the bases of the leaves; it is as thick as a finger, green, hairy, and rough to the touch; toward the top it is divided into several branches, which are covered with long series of flowers, moderately large, and of a white colour, sometimes purple, sometimes yellow: this variation of the colour on the flower, has by some been made the distinction of two different species, but erroneously.

The plant is a native of England, and is common in watery places. C. Bauhine calls it, *Symphytum consolida major*; others, *Consolida major*, and *Symphytum majus*, or *Vulgare*. The root of this is a powerful agglutinant, good in the fluor albus.

2. *Symphytum foliis oblongis angustioribus.*

The oblong, narrow-leaved Symphytum.

The root is tuberous, long, branched, and brittle, black on the surface, white within. The radical leaves are eight inches long, and two and a half in breadth, of a pale bright green colour, and not so rugose or rough to the touch, as those of the common Comfrey. The stalk is green, succulent, and edged with membranes from the bases of the leaves, so that it looks pentangular: the leaves stand at distances on it; they are oblong, narrow, pointed, and of a bright green: the flowers are of a whitish colour, longer, but not thicker than those of the common Comfrey.

This is frequent in the woods of Germany, and other places. It varies much in size, and has been described by C. Bauhine, in these states, as two species, under the names of *Symphytum majus tuberosa radice*, and *Minus*.

PULMONARIA.

THE calyx of the Pulmonaria is a permanent, cylindric, and somewhat pentangular perianthium, formed of one leaf, and divided into five segments at the edge. The corolla consists of a single petal: the tube is cylindric, and of the length of the cup: the limb is lightly divided into five segments, obtuse, and erecto-patent. The mouth is open; the stamina are five very short filaments, placed in the mouth of the corolla: the antheræ are erect and connivent: there are four germina: the style

is



is filiform, and shorter than the cup; the stigma is obtuse and emarginated. There is no pericarpium: the calyx, unaltered, contains four roundish, obtuse seeds.

1. *Pulmonaria foliis radicalibus ovato-cordatis.*

The Pulmonaria, with ovato-cordated, radical leaves.

**Sage of Je-
rusalem.**

The root is composed of a cluster of white and moderately thick fibres. The radical leaves are five or six inches long, and three or four inches broad, of a dusky green colour, even at the edges, covered with a long hairiness, and soft to the touch. The stalk grows to six, eight, or ten inches high; it is hairy, angular, and often purplish: the leaves that stand on it are placed irregularly, and have no pedicles: they are oblong, and an inch in breadth. The tops of the stalks usually are curled, before the flowers are all opened; the flowers are moderately large, and of a blue or purplish colour; often some are blue, others purple, on the same branch; sometimes also they are white. The radical leaves are sometimes also plain and uniform, sometimes they are blotched with white.

This is a native of many parts of Europe, but with us is only kept in gardens. C. Bauhine calls it, *Symphytum maculosum* five *Pulmonaria maculosa*. J. Bauhine, *Pulmonaria maculosa*. The leaves are accounted pectoral and cardiac, but are not used in the present practice.

2. *Pulmonaria foliis radicalibus lanceolatis.*

The Pulmonaria, with lanceolated, radical leaves.

**Echium-leaved
Pulmonaria.**

The root consists of a great number of thick, white fibres. The radical leaves are five inches long, and about two and a half broad, and are shaped much like those of the bugloss: they are hairy, and of a dusky green colour. The stalk is angular and thick; it grows sometimes to a foot high, and is furnished all the way up with oblong, narrow leaves; at the top it divides into two or three short ramifications, which are curled at the ends, and on which stand three or four flowers at a time; these are large, and of a beautiful red colour, sometimes white.

This is said to be a native of England, and found in woods in Hampshire. C. Bauhine calls it, *Pulmonaria angustifolia rubente cærulea flore*; others, *Pulmonaria foliis echii*.

The other more singular species are, 1. The roundish-leaved Pulmonaria. 2. The narrow-leaved, blue Pulmonaria. 3. The strawberry-scented Pulmonaria. 4. The Cretic Pulmonaria, with inflated cups. 5. The tunnel-flowered, narrow-leaved, oriental Pulmonaria.

BORRAGO.

THE calyx of the Borrage is a permanent perianthium, divided into five segments at the top. The corolla consists of a single petal of the length of the cup: the tube is short; the limb divided into five segments, and plane; the opening coronated, with five obtuse, emarginated prominences. The stamina are five subulated and connivent filaments: the anthers are oblong and connivent; they are affixed to the middle of the inner side of the stamina: the germina are four; the style is filiform, and longer than the stamina; the stigma is simple. There is no pericarpium, but the cup grows larger and inflated, and contains four seeds of a roundish figure, rugose, carinated outwardly from the point, globose at the base, and inserted into a hollowed receptacle.

This genus comprehends the Borrage of authors, and the *Borraginoides* of Tournefort, and *Cynoglossoides* of Linnæus. The figure of the segments of the calyx, or of the size of the tube of the corolla, are not to be supposed sufficient characters for distinguishing of genera.

1. *Borrago foliis omnibus alternis, calycibus patentibus.*
The Borrage, with all the leaves alternate, and with
patent cups.

**Common
Borrage.**

The root is oblong, half an inch thick, white, and full of a viscid juice. The radical leaves are six or eight inches long, and four or five broad, of a blackish green colour, very rugose, and plicated, and very rough to the touch; they lie spread on the ground, and have a kind of little black spines all over them. The stalks are thick, tender, green, hollow, and hairy; they grow to two feet high, and have all the leaves placed in an alternate order on them, like the radical ones, only smaller: the stalk divides toward the top into three or four branches, and on these stand the flowers; they have pedicles an inch, or more, in length, and are large, and usually of a beautiful blue, sometimes red, sometimes white.

The plant is not a native of England, but it is common in our gardens. J. Bauhine calls it, *Borrago floribus cæruleis*.

2. *Borrago foliis ramificationum oppositis, calycis foliolis sagittatis.*
The Borrage, with opposite leaves at the ramifications, and sagittated seg-
ments of the cup.

The root is large, white, and oblong; the radical leaves are oblong and narrow, of a pale green colour, and rugose: the stalk is green, round, and hairy: the leaves stand alternately, except at the base of the ramifications, where there are always two opposite one to another: they are oblong and narrow, and surround the stalk at the base. The flowers are large, and of a beautiful pale blue, and the segments of the cup are of a sagittated figure.

This is a native of Ceylon, but we have it in some of our stoves. Linard calls it, *Cynoglossoides folio caulem amplexante*. Boerhaave, *Boraginoides angustifolia flore pallidescente cæruleo*.

LYCOPSIS.

THE calyx of the *Lycopsis* is a permanent perianthium, divided into five oblong, acute, patulous segments. The corolla consists of a single petal: the tube is cylindric and crooked: the limb is lightly divided into five segments: the mouth or opening of the flower is shut up by five connivent, prominent, convex squammule: the stamina are five very small filaments, situate at the flexure of the corolla: the anthers are small and covered; the germina are four: the style is filiform, and of the length of the stamina; the stigma is obtuse and bifid. The calyx supplies the place of a pericarpium; it becomes large and inflated, and contains four seeds of an oblong figure. The great distinguishing character of this genus is in the flexure of the tube of the corolla.

It comprehends the *Lycopsis* of authors, the *Echioides* of Rivinus and Dillenius, the *Buglossoides* of Rivinus, and some of the *Buglossa* of Morison.

1. *Lycopsis foliis lanceolatis, calycibus florum erectis.*
The lanceolate-leaved Lycopsis, with erect flower-cups.

The root is white, simple, and oblong; the radical leaves are oblong and hairy: the stalks rise to a foot high, or more; they are round, tender, and rough to the touch, and toward the top divided into several branches. Along the stalks, from the bottom, stand alternately leaves an inch and half long, and not half an inch broad, rough, hairy, and of a dusky green; toward the tops of the branches stand the flowers, and under them a peculiar kind of leaves of a triangular figure, short, pointed, and surrounding part of the stalk at their base. The flowers stand single, on very short pedicels, rising from the axils of these leaves: they are small, and of a pale blue colour.

This is frequent in our corn-fields. C. Bauhine calls it, *Buglossum sylvestre minus*. J. Bauhine, *Echium Fuchii* sive *Borrago sylvestris*.

2. *Ly-*

2. *Lycopsis foliis repandis densatis callofis, caule decumbente corollis cernuis.*

The procumbent *Lycopsis*, with callous, dentated leaves, and bending corolla.

The root is small, white, and oblong; the radical leaves are oblong, narrow, and dentated at the edges, rough to the touch, and covered with little white protuberances or bullae. The stalk grows to six or eight inches long, and lies procumbent on the ground; and has a number of oblong, narrow, bullated leaves, placed alternately on it; and bending backward; at the top of the stalks and branches stand the flowers; they are small, but of a beautiful blue, and variegated.

This grows out of the fissures of walls in the island of Crete, and elsewhere, in that part of the world. Morison calls it, *Buglossum annuum humile foliis bullatis, flore caeruleo eleganter variegato*. We have it sometimes in our gardens.

3. *Lycopsis foliis integerrimis, calycibus fructuum inflatis pendulis.*

The whole-leaved *Lycopsis*, with pendulous cups, when in seed.

The root is white, oblong, and simple: the radical leaves are three inches long, and an inch broad: the stalk grows to six or eight inches high; it is solid, but infirm, and scarce able to support itself erect. The leaves stand alternately on it; they are broadest at the base, and go narrower to the point; they are about an inch and a half long, and not half an inch broad, and covered with a white, hoary matter. The flowers stand at the tops of the branches; they are very small and black: the cup they stand in is inflated, and, after they are fallen, it becomes much more so, representing, in some degree, the case or husk of the winter cherry.

This species is a native of Hungary; we have it in our gardens. Rivinus calls it, *Echioides flore pullo*. Morison, *Buglossum procumbens annuum pullo minimo flore*.

ECHIUM.

THE calyx of the *Echium* is a permanent perianthium, divided at the edge into five erect, subulated segments: the corolla consists of a single petal: the tube is very short; the limb is erect, and grows gradually wider: at the extremity it is divided into five segments; two of the upper segments are longer than the rest, and the lower one is small, acute and reflex. The stamens are five subulated filaments, of the length of the corolla; the anthers are oblong and incumbent: the pistil has four germina; the style is filiform, and of the length of the stamens: the stigma is obtuse and bifid; there is no pericarpium. The cup becomes rigid, and contains in it four roundish and obliquely acuminate seeds.

1. *Echium caule simpliciter, foliis caulinis lanceolatis bispidis, floribus spicatis lateralibus.*

The simple-stalked, lanceolate-leaved *Echium*, with spiked lateral flowers.

Uiper's
Bugloss.

The root is four inches long, and half an inch thick, brown, hard, and insipid. The radical leaves are oblong and narrow: the stalk grows to a foot and half high, and is round, rough, and beautifully spotted with red and black: the leaves stand very close, and are oblong, and pointed at the ends: the flowers grow all up the stalk, from near the bottom to the top; they are large, and very beautiful, of a fine blue, with an admixture of red in various degrees.

This is common in dry places, and by way-sides. C. Bauhine calls it, *Echium vulgare*. The powder of it's root is recommended against epilepsies, but it is not used.

2. *Echium corollis vix calycem excedentibus margine villosis.*
The little-flowered Echium, with villose edges to the flower.

The root is simple, oblong, and brown; the radical leaves are two inches and a half long, half an inch wide, and pointed at the ends: the stalk grows to two feet high, and is very robust, and beautifully spotted; the leaves stand thick on it, they are an inch and a half long, and scarce more than a third of an inch broad, of a pale green colour, and hairy, but not so rough as those of the common Echium. The flowers are small, scarce appearing beyond the cup, and are of a bluish-white colour.

It is a native of Italy, and is also wild with us. C. Bauhine calls it, *Echium majus et asperius flore albo*, and Lycopsius, Camerarius, *Echium flore albo*.

3. *Echium calycibus fructiferis distantibus.*
The Echium, with distant, fructiferous cups.

The root is long and black; the radical leaves are two inches long, and approach to an oval figure: the stalks rise to twelve or fourteen inches high, and are round, firm, hairy, and beautifully spotted: the leaves stand thick on them, and are an inch, or more, in length, and very narrow; the stalk is divided into several branches toward the top, and has a number of flowers on it, they are large and red.

It is a native of Hungary, and many parts of Germany, and is also common in the East. C. Bauhine calls it, *Echium Creticum angustifolium et latifolium rubrum*. Ray, *Echium flore rubro*.

The other more singular species are, 1. The great-leaved, Portugal Echium. 2. The great-flowered, narrow-leaved, very rough Echium. 3. The great-flowered, Sea-Echium. 4. The narrow, hairy-leaved Echium. 5. The rosemary-leaved Echium.

ASPERUGO.

THE calyx of the Asperugo is a permanent perianthium, composed of a single leaf, erect, and divided into five segments at the edge, with two denticles between each pair of the segments. The corolla consists of a single petal; the tube is cylindric; and very short: the limb is small, and divided into five segments: the opening of the flower is closed up by five prominent and connivent convex squamulae. The stamina are five very short filaments, in the mouth of the corolla; the antherae are oblong, and covered: the germina are four, and compressed; the style is filiform and short; the stigma is obtuse. There is no pericarpium, but the cup becomes very large, erect, compressed, and connivent, in manner of two parallel plates, and having five teeth on its rim. The seeds are four, and oblong: the cup, containing the seeds, is the great characteristic of this genus, of which there is only one known species.

ASPERUGO.

The root of the Asperugo is white, oblong, and slender: the radical leaves are three inches long, narrow at the base, and broadest in the middle, terminating in an obtuse point. The stalks grow to two feet in length, but they do not stand erect, but lie on the ground: they are much branched, angular, hollow, and armed with a kind of crooked spines, so that they stick to every thing they touch. The leaves stand single and alternate; on the lower part of the stalks, toward the top, there are sometimes two or three together: they are two inches long, near half an inch broad in the middle, and narrower at each end; the lower ones are more obtuse than the upper; they are all hairy: the flowers stand singly in the axils of the leaves or divarications of the branches; they are very small, and of a deep purplish blue. As soon as the flower is fallen, the cup assumes the singular figure, which some have likened to a goose's foot.

It is found in some parts of England, but is not common. I met with it, this year, near Lincoln-heath. Tournefort calls it, *Asperugo vulgaris*; C. Bauhine, *Bluglossum sylvestre caulibus procumbentibus*; Rudbeck, *Alysson echinoides Germanorum*,

CERINTHE.

CERINTHE.

THE calyx of the Cerinthe is a permanent perianthium, divided into five oblong, equal segments. The corolla consists of a single petal: the tube is short and thick; the limb is a little thicker than the tube, and is somewhat bellied; it is divided into five segments, and the mouth is open and pervious. The stamina are five very short, subulared filaments; the antheræ are acute and erect; the germen is divided into four parts; the style is filiform, and of the length of the stamina; the stigma is obtuse. The fruit consists of two hard obseous bodies, of an oval figure, gibbous on the outside, plane within, acute, emarginated, and containing each two cells: the seeds are single, roundish, and acuminate.

This genus comprehends the Cerinthe and the Cerinthoides of Boerhaave. The Cerinthoides has four distinct seeds, but, the essential character being in the flower, this is not to be regarded as a generical character.

1. *Cerinthe foliis cordatis sessilibus.*

The Cerinthe, with heart-fashioned leaves without pedicles.

Purple honey-
wort.

The root is oblong, white, thick, and furnished with many fibres. The stalks grow to two feet in height; they are round, thick, and green, and are divided from the very root into a number of ramifications; the leaves stand very thick upon them; they are oblong, broad, and obtusely pointed, of a bluish green colour, and spotted with blotches of white; the branches bend downward toward their tops, and are furnished with a great many flowers, each on it's separate pedicle. They are small, and of a purplish colour; sometimes yellowish or whitish.

It is a native of most of the southern parts of Europe; we have it in our gardens, C. Bauhine call it, *Cerinthe flore ex rubro purpurascens*; and, as if another species, a second time, *Cerinthe flavo flore asperior*.

2. *Cerinthe foliis angustioribus, corollis brevibus.*

The narrow-leaved, short-flowered Cerinthe.

The root is oblong, as thick as a finger, and blackish: the radical leaves are three inches long, and moderately broad, somewhat rough to the touch, and of a bluish-green. The stalks are a foot, or more, in length, but weak and procumbent: the leaves stand alternately, and are small, oblong, and of a bluish colour, with a silvery cast, narrow, and even at the edges. The flowers stand in the axæ of the leaves; they are large, and red, before they open; but when fully expanded, blue.

This is a native of England; we have it by the sea-coasts, in some of our northern counties, in abundance. Boerhaave calls it, *Cerinthoides argentea flore pulchre ceruleo*; Ray, *Echium maritimum*. Morison makes it a *Cynoglossum*, and others a *Buglossum*, but it's characters shew it a true Cerinthe.

The other species are; 1. The little, yellow Cerinthe. 2. The Alpine Cerinthe, with striated flowers. 3. The narrower and rougher-leaved Cerinthe.

MESSERSMIDIA.

THE calyx is a short, hairy perianthium, divided into five segments; the corolla consists of a single petal of a cylindric form, but open at the mouth: the stamina are five long, slender, filiform filaments; the antheræ are tumid; the germen is formed of four parts; the style is very slender, and moderately long: the fruit consists of four seeds. Of this genus there is only one known species.

MESSERSMIDIA.

The root is long, thick, and of a brownish colour. The radical leaves are three inches long, two and a half broad, and of a lanceolated shape: the stalk is branched, round, and hairy; it grows to a foot in height: the leaves on it stand alternately; they are two inches long, more than an inch broad, and lanceolated of a dusky greenish colour. The flowers stand in clusters about the tops of the stalks; their pedicles are more than an inch long, and grow from the axæ of the leaves: the calyx is hairy. The whole habit of the plant has much the appearance of a cerinthe.

It is a native of Russia, and grows there in barren, sandy places. Amman calls it, *Argusia montana*.

TOURNEFORTIA.

THE calyx of the *Tournefortia* is a small permanent perianthium, divided into five lanceolated segments: the corolla consists of a single petal, the tube is oval, and longer than the cup; the limb is lightly divided into five segments, and patent; the segments broad and acute. The stamina are five subulated filaments, of the length of the tube of the corolla; the antheræ are simple, and placed in the mouth; the germen is globose, and placed under the receptacle of the flower: the style is simple, and of the length of the stamina; the stigma is simple. The fruit is a globose, bilocular berry; the seeds are two, of an oval figure, and separated by a pulp.

Class the Fifth. Order the First.

Division the Second.

Pentandria Monogynia, with monopetalous flowers, and with capsules within the flowers.

ANDROSACE.

THE calyx of the *Androsace* is double; the universal involucre is very small, but composed of many leaves, and contains many flowers: the perianthium is permanent, and of a pentagonal figure, formed of one leaf, and divided into five segments, at the top erect and acute. The corolla consists of a single petal; the tube is of an oval figure, and is surrounded by the calyx: the limb is divided into five obtuse, entire segments, of an ovato-oblong figure: the stamina are five very short filaments, placed within the tube of the flower: the antheræ are oblong, erect, and included; the germen is globose; the style is filiform, and very short; the stigma is globose, and included. The fruit is a globose capsule, standing on a plane cup, containing one cell, and dividing into five parts at the top; the seeds are numerous, and roundish, gibbous on one side, and plane on the other; the receptacle is erect and free.

1. *Androsace foliis lanceolatis dentatis glabris, perianthiis corolla brevioribus angulatis.*

The smooth, dentated, lanceolate-leaved Androsace, with a short, angulated, perianthium.

The root is oblong, slender, and reddish; the radical leaves are numerous, and spread on the ground; they are small, oblong, and crenated at the edges: the stalks are numerous, two or three inches high, naked, a little hairy, and firm; at the summit of each stands a kind of little umbel, composed of eight or ten flowers, sustained each on its separate, oblong pedicle; they are small and white.

This is not a native of England, but is found in most other of the northern parts of Europe. C. Bauhine has described it three times. Amman mentions what he calls another species, under the name of *Androsace coronopi foliis*; but the seeds sent by himself, and sown, prove it to be the same with this. Buxbaum calls it, *Androsace montana flore minore*; Ray, *Alpine verna Androsaces capitulis*.

2. *Androsace perianthiis maximis.*

The great cupped Androsace.

The root is small, oblong, and white; the radical leaves are very numerous; they lie spread on the ground, and are two inches long, half an inch broad, hairy, ribbed in the manner of plantain leaves, somewhat crenated, and of a pale green colour.

The

The stalks are numerous; they are five or six inches high, round, haked, a little hairy, and of a green or purplish colour: at the top stand six or eight pedicles, an inch long, and forming a kind of umbel; on each of these stands a very large perianthium, with a small, white flower in it.

This is a native of Austria. It is kept in some of our gardens. Tournefort calls it, *Androsace vulgaris latifolia annua*. Clavius, *Androsace altera*.

The other species of *Androsace* are, 1. The narrow-leaved, smooth, perennial *Androsace*. 2. The narrow-leaved, hairy, many-flowered *Androsace*; and, 3. The single-flowered, narrow-leaved *Androsace*. The two last species are called, by most authors, *Sedum*.

PRIMULA.

THE common involucre of the flowers of the *Primula* is small, formed of many leaves, and contains several flowers: the perianthium is formed of one leaf; it is tubulous, pentangular, divided into five segments, erect, acute, and permanent. The corolla consists of a single petal; the tube is cylindric, and of the length of the cup, and terminated by a small hemispheric neck: the limb is patent, and divided into five obtuse, emarginated, and obversely cordated segments: the stamina are five very short filaments, placed within the neck of the corolla: the anthers are acuminate, erect, connivent, and included: the germen is globose; the style is filiform, and of the length of the cup: the stigma is globose. The pericarpium is a cylindric capsule, nearly of the length of the cup, covered, unilocular, and opening in ten places at the top. The seeds are numerous and roundish; the receptacle is of an ovato-oblong figure, and free.

This genus comprehends the *Primula veris*, and the *Auricula ursi*, of authors.

1. *Primula foliis denticulatis rugosis.*

The denticulate and rugose-leaved Primula.

Cowslip.

The root is composed of a great number of thick, whitish fibres, very long, furnished with other smaller fibres at their sides, and affixed to a small, reddish, squamose tuberosity or head. The radical leaves are two inches and a half long, an inch and a half broad, of a dusky green, very rugose, and somewhat denticulate. The stalk is six or eight inches high, single, naked, round, of a pale, whitish colour, and a little hairy. The flowers stand in a kind of umbel at the top, eight or ten together, each on a pedicle of an inch, or more, in length; they are small, yellow, and very sweet.

It is very common in our meadows in April. J. Bauhine calls it, *Primula veris odorata flore luteo simplici*. C. Bauhine, *Verbasculum pratense odoratum*.

It is a plant which easily runs into varieties, and has been too generally described under these, as if of a different species. In the fields, the whole plant is sometimes larger, the flowers broader and paler coloured, and their pedicles longer; in this case the common people call it, the great Cowslip, or Oxlip; and J. Bauhine calls it, *Primula veris caulifera pallido flore inodoro*. C. Bauhine, *Verbasculum pratense inodorum*. In gardens, among a multitude of other varieties, the most beautiful and most singular is that in which the calyx assumes the appearance of a corolla. This variety is called, by Tournefort and others, *Primula veris prolifera flore purpureo*; with us, the *Polyanthos*. This elegant variety is wild, in the eastern parts of the world; with us, only in gardens.

The flowers of the common Cowslip are gently narcotic; a syrup of them used to be kept in the shops, with this intent, but a conserve answers the purpose better.

2. *Primula foliis crenatis glabris, limbo florum plano.*

The smooth, crenated-leaved Primula, with the limb of the flower plane.

Bird's Eye.

The root consists of a number of long and thick fibres, affixed to a short, small, squamose head. The radical leaves are spread on the surface of the ground; they are an inch and a half long, near an inch broad, and serrated about the edges; smooth on the surface, not rugose, or wrinkled, as those of the cowslip, and of a much paler

ler green colour. The stalk is four inches high, round, thick, and firm; at it's top stand a number of flowers, ten, or more, each on a pedicle of half an inch long; they are usually of a beautiful pale red, sometimes of a deep red, and sometimes white.

This is a native of the North of England. Linnæus calls it, *Primula floribus erectis fastigiatis*. Clusius, *Primula veris flore rubro*. C. Bauhine, *Verbaſculum umbellatum Alpinum minus*.

3. *Primula foliis ferratis carnofis glabris.*
The serrated, thick-leaved *Primula*.

The Auricula,
or Ricloſe.

The root conſiſts of a thick, ſquammole head, from which grow a multitude of white, long, and thick fibres: the radical leaves are oblong and broad, three inches in length, two in breadth, ferrated round the edges, and obtuſely pointed, of a pale bluifh-green colour, and uſually duſty or farinaceous. The ſtalk is round, moderately thick, ſimple, naked, and four or five inches high; at it's top ſtand ten, or more, flowers, on long pedicles, forming a kind of umbel; they are larger than the flowers of the common cowſlip, and of a paler yellow, and their calyx is ſhorter.

This is the native wild ſtate of the plant, from whole natural varieties, aſſiſted by culture, all our beautiful auriculas in the gardens are produced.

Theſe natural varieties are only four: 1. The ſmooth, green-leaved kind, with the ſegments of the flower biſid, the limb erect and purple, and the mouth of the flower yellow. 2. The farinaceous-leaved kind, with the ſegments of the corolla emarginated, the limb plane and red, the mouth yellow. 3. The farinaceous-leaved kind, with the ſegments of the corolla undivided, the limb erect and red, the mouth whitish; and, 4. The farinaceous-leaved kind, with the ſegments of the corolla bent back, the limb of a blackiſh purple, the opening yellow in the middle, and white at the edges. From the ſeeds of theſe ſeveral varieties collected from plants, which have ſtood among others, and whole ſeeds have accidentally been impregnated by the farina of the neighbouring plants, ariſe all thoſe beautiful variations of flowers, which are the pride of the Britiſh and Dutch ſloriſts, and of thoſe of many other parts of the world. Tournefort mentions ſixteen of theſe varieties, as really diſtinct ſpecies; Cluſius five, and C. Bauhine fix.

The principal other ſpecies of the *Primula* are, 1. of the cowſlip and primroſe kind: 1. The hoary-leaved *Primula*. 2. The folioſe-stalked *Primula*. 3. The common Primroſe. 4. The oriental *Primula*, of which there are a number of varieties. 2. Of the auricula kind, or ſuch as are ranked with the auriculae by authors, though not properly ſuch, are, 1. The round-leaved *Primula*. 2. The narrow-leaved *Primula*. 3. The whole-leaved *Primula*. 4. The little, broad-leaved *Primula*.

C. Q. R. T. U. S. A.

THE calyx of the *Cortuſa* is a ſmall, patent perianthium, permanent, and divided into five obtuſe ſegments, with reflex tops. The corolla conſiſts of a ſingle petal, and is of the rotated kind: the tube is ſcarce diſcernible; the limb is large, plane, and divided into five roundiſh ſegments, and at the baſe of each of theſe is a round, prominent tubercle. The ſtamina are five ſhort, obtuſe filaments; the antheræ are compoſed of two lamellæ; they are oblong, erect, and affixed to the exterior part of the filaments: the germen is oval; the ſtyle is ſiliſorm, and ſcarce equal to the ſtamina: the ſigma is ſimple; the fruit is a capſule of an ovato-oblong figure, acuminate, furrowed longitudinally on each ſide, formed of two valves, with their ſides involuted, and containing only one cell. The ſeeds are numerous, oblong, obtuſe, and ſmall.

1. *Cortuſa foliis laciniatis.*
Jagged-leaved *Cortuſa*.

Bear's Ear
Sanicle.

The root conſiſts of a ſhort and thick tuberous head, from which there grow a multitude of fibres, long, moderately thick, and black. The radical leaves are deeply divided into the ſegments, of a ^{pal} green colour, ſhining on the upper ſurface, not underneath,

underneath, but no where at all dusty; and of an acrid taste. The stalk is round, slender, and about three inches high, naked, and usually of a purplish colour; at the top stand ten or twelve flowers on long pedicles, forming a kind of umbel; they are large, of a rotated form, and pendent, like so many bells; their colour is a deep blood-red, the mouth yellow.

This is found on the mountains, in the northern parts of Europe. J. Bauhine calls it, *Cortusa*. C. Bauhine, *Sanicula montana latifolia laciniata*.

CYCLAMEN.

THE calyx of the Cyclamen is a round, permanent perianthum, divided into five oval segments: the corolla consists of a single petal, of a rotated form; the tube very short, the mouth prominent: the figure of the tube is globose; the size twice that of the cup, yet small and nutant. The limb is large, and turns upward, and is divided into five ovato-lanceolate segments: the neck prominent. The stamina are five very small filaments, in the tube of the corolla: the anthers are strait, acute, and, in the neck, the germen is roundish; the style is filiform, strait, and longer than the stamina; the stigma is acute; the fruit is a globose berry, opening in five places at the top, and containing only one cell: the seeds are numerous, of a sub-oval, angular figure: the receptacle is oval and free.

1. *Cyclamen foliis cordatis corolla reflexa.*

The cordated-leaved Cyclamen, with reflex flowers.

Autumnal

Goldbeard.

The root is large, tuberous, and of a roundish figure, furnished with a few fibres; the radical leaves stand on pedicles of three inches long; they are about three quarters of an inch in diameter, roundish, but cordated, of a dark green, usually spotted with white on the upper side, and purple underneath: the flowers stand singly, on long pedicles; they are large, red, and of a sweet smell.

It is a native of some of the northern parts of Europe, and grows in damp, shady places; we have it frequent in our gardens. Clusius calls it, *Cyclamen odorato purpureo flore*. C. Bauhine, *Cyclamen orbiculato folio subus purpurascens*.

2. *Cyclamen foliis angulosis corolla reflexa.*

The angular-leaved Cyclamen, with reflex flowers.

The root is very large, roundish, and depressed, black on the surface, white within, and has a few fibres. The radical leaves stand on pedicles of four inches long; they are an inch long, and near as much in breadth, sinuated in such manner, as to resemble the leaves of ivy, and serrated round the edges; of a deep green, spotted with white on the upper surface, and purplish underneath. The flowers are large, of a deep purple, like that of the violet, and, bend downward; they are affixed singly to long, slender, naked stalks.

This is a native of Italy, but is frequent in our gardens.

The varieties of these two species of Cyclamen, owing to culture, are almost innumerable. Tournefort has mentioned more than thirty of them, under the titles of different species.

SOLDANELLA.

THE calyx of the Soldanella is a permanent perianthum, divided into five lanceolated segments. The corolla consists of a single petal; it is of a campanulated form, and jagged at the edge: the stamina are five subulated filaments; the anthers are simple; the germen is roundish; the style is filiform, of the length of the corolla, and permanent: the stigma is obtuse. The fruit is an oblong, cylindric capsule, obliquely striated, containing only one cell, and opening in ten places at the point: the seeds are numerous, acuminate, and small, the receptacle columnar and free.

1. *Soldanella*

1. *Soldanella foliis subrotundis.*
Roundish-leaved Soldanella.

Sea Bind-
Weed.

The root is fibrous and white: the radical leaves stand on pedicles of two or three inches long; they are roundish, but somewhat broader than long, of a dusky green colour, and full of a milky juice: the stalks are procumbent and creeping, six or eight inches long, sometimes much more, and take root at the joints. The flowers rise from the axils of the leaves, which are like the radical ones; they stand singly, on pedicles of two or three inches long, and are large, and of a fine purple, not less than half an inch in diameter at the mouth.

It is frequent on our sea-shores. C. Bauhine calls it, *Soldanella maritima minor*; J. Bauhine, *Brassica marina five Soldanella*.

2. *Soldanella foliis cordatis.*
Cordated-leaved Soldanella.

Sicilian Sea
Bind-Weed.

The root is a tuft of large fibres: the radical leaves stand on pedicles of about an inch in length; they are short and broad, rounded at the extremity, and deeply cordated at the base, and usually emarginated at the top, an inch and a half long, an inch broad, and of a dusky green, thick, succulent, and full of a milky juice. The stalks are in part procumbent, in part erect; where they lie upon the ground, they take root at every joint: where they are erect, they have leaves, somewhat like the radical ones in shape, but doubly articulated, and, as it were, pinnated at the base; these stand alternately, on short pedicles. The flowers are very large, and of a fine red, broader, in proportion to their length, than those of the former.

This is frequent on the shores of Sicily. C. Bauhine calls it, *Soldanella seu Brassica maritima major*.

MENYANTHES.

THE calyx is an erect, permanent perianthium, formed of one leaf, and divided into five segments at the edge: the corolla consists of a single petal; the tube is short, and of a cylindric figure, but widening at top; the limb is deeply divided into five reflexo-patent, obtuse, and hairy segments; the stamina are five short, subulated filaments; the antheræ are acute, erect, and bifid at the base; the germen is conic; the style is cylindric, and nearly of the length of the corolla, and the stigma bifid and compressed. The fruit is an oval, unilocular capsule, surrounded by the cup; the seeds are small, numerous, and oval.

This genus comprehends the *Menyanthes* and *Nymphoides* of Tournefort, and the *Acopa* of Morison.

1. *Menyanthes foliis ternatis.*
The trifoliate Menyanthes.

Buck-
bean.

The root is long, white, jointed, and a third of an inch in diameter; it creeps under, or on, the surface, and sends out fibres at every joint: the radical leaves stand on pedicles, four inches long, round, thick, green, and fungous within; on each of these pedicles stand three leaves; they are two inches long, an inch and a half broad, and resemble, in some degree, the pinnae of the bean leaf: the stalk grows to a foot high; it is thick, round, and of a pale green; on it's top stand a number of flowers, in a kind of thick spike; they are red, before they open, but, when open, white, very beautiful, and hairy.

It is common in wet grounds, with us. C. Bauhine and others call it, *Trifolium palustre*; Morison, *Acopa*.

2. *Menyanthes foliis subrotundis.*
Roundish-leaved Menyanthes.

Fimbriated
Water-lilly.

The root is composed of a cluster of thick, white fibres: the stalks are procumbent, and take root, as they lie upon the mud, sending fibres from every joint; the leaves are large

large and roundish, thick, glossy, and of a deep green; they swim on the surface of the water, being affixed to long, round, and thick pedicles. The flowers stand also on long pedicles; they are large, yellow, hairy, and fimbriated at the edges of the segments; they do not at all resemble the flowers of the nymphæa, but perfectly those of the common menianthes, except in size and colour.

This a native of England, but it is not common; I found great plenty of it, this year, near Peterborough, in Northamptonshire. Tournefort calls it, *Nymphoides aquis inascens*; C. Bauhine, *Nymphæa lutea minor flore fimbriato*. The leaves of this species are sometimes spotted with purple, the flowers sometimes white.

HOTTONIA.

THE calyx is a perianthium, formed of one leaf, divided into five linear, erect, patulous segments: the corolla consists of a single petal; the tube is of the length of the calyx; the limb is plane, and divided into five ovato-oblong, emarginated segments; the stamina are five short, erect, subulated filaments, placed opposite to the segments of the corolla; the anthers are oblong; the germen is globose, but acuminate; the style is filiform, and short; the stigma is globose: the fruit is a globose, acuminate capsule, placed on the cup, and having only one cell; the seeds are numerous and round; the receptacle large and also round.

This genus comprehends the *Hottonia* of Boerhaave, and the *Stratiotes* of Vaillant, but not the *Stratiotes* of authors in general, that being a distinct genus.

Of this there is only one known species.

HOTTONIA.

Water Violet.

The root is a cluster of white fibres, moderately thick, and very long, descending deep into the mud: the radical leaves are pinnated, the pinnae divided into long and narrow segments, and, as they lie expanded in the water, making a very beautiful appearance: the stalks which sustain the flowers are round, slender, naked, and a foot, or more, in length; they are jointed, as it were, toward the top, and, at every joint, there stand four or five beautiful, moderately large, white flowers, disposed in a radiated form, and placed on pedicles of an inch, or more, in length; they are white, and the apices in their center yellow.

It is frequent with us in ditches, and other shallow waters; the whole plant is generally immersed in the water, the top, with the flowers, only being above the surface. C. Bauhine calls it, *Millefolium aquaticum*, five *Viola aquatica caule nudo*; Vaillant, *Stratiotes vulgaris flore albo*; Ruppius, *Myriophyllum Rivini*.

LYSIMACHIA.

THE calyx is an acute, erect, permanent perianthium, divided into five segments; the corolla consists of a single petal; the tube is scarce discernible; the limb is divided into five ovato-oblong segments; the stamina are five subulated filaments, nearly cohering at their bases, and of about half the length of the corolla; the anthers are acuminate; the germen is roundish; the style is filiform, of the length of the stamina; the stigma is obtuse: the fruit is a capsule, of a globose figure, composed of two valves, and having only one cell; the seeds are numerous, and angulated; the receptacle globose, large, and punctated.

1. *Lysimachia foliis lanceolatis racemo composito terminatrice.* **Willow** The lanceolated-leaved, cluster-flowered *Lysimachia*. **Willow-herb.**

The root is creeping, oblong, of the thickness of a finger, jointed, and of a reddish colour: the stalk grows to five feet high; it is striated, hairy, firm, and of a pale green: the leaves stand three, four, or five at a joint; they are three inches long, an inch and a half wide, broadest in the middle, and terminate in a point; at the top of the main stalk and branches are spikes of very beautiful yellow flowers.

It grows in damp places, with us. C. Bauhine calls it, *Lysimachia lutea major*; Rivinus, *Nummularia erecta*.

Y y y

2. *Lysimachia*

2. *Lyfimachia racemis simplicibus lateralibus.*

The *Lyfimachia*, with simple clusters of flowers from the sides.

Globose-flowered, yellow
Willow herb.

The root is long, black, and creeping, frequently jointed, and of the thickness of a goose-quill; the stalk rises to a foot high; it is striated, hollow, slender, and brittle; the leaves grow two at a joint, and the joints stand very close; the leaves are an inch and a quarter long, three quarters of an inch broad, and of a pale green: from the axils of these grow pedicels, slender, and about an inch in length, on the summit of which stand roundish, or oval, clusters of small, yellow flowers, the whole cluster of the bigness of a nutmeg.

It is frequent about lakes and rivers, in Denmark; we have it also in England, but very rare. C. Bauhine calls it, *Lyfimachia bifolia flore globofo*; Linnaeus, *Lyfimachia ex alis foliorum thyristera*; Rudbeck, *Lyfimachia falcaria*.

2. *Lyfimachia foliis subrotundis, floribus solitariis, caule repente.*

The creeping, round-leaved, single-flowered *Lyfimachia*.

Yellow Moneywort.

The root is composed of a few white fibres: the stalks trail upon the ground, and take fresh root at every joint; they are a foot, or more, in length: the leaves stand in pairs; they are roundish, of a bright green, and very thin: the flowers grow from the axils of the leaves; they are very large, and yellow.

The whole plant makes a beautiful appearance, and is common with us in damp places. Tournefort calls it, *Lyfimachia humifusa rotundiore folio, flore luteo*; C. Bauhine, *Nummularia flore luteo*.

The principal species, beside these, are, 1. The willow-leaved, white-flowered *Lyfimachia*. 2. The great, broad-leaved, Canada *Lyfimachia*. 3. The little, purple Moneywort of authors. 4. The pointed-leaved *Lyfimachia*. 5. The narrow-leaved *Lyfimachia*, called *Linum stellatum*. 6. The oriental, purple-spiked *Lyfimachia*.

ANAGALLIS.

THE calyx is a permanent perianthium, divided into five carinated segments; the corolla consists of a single petal; there is no tube; the limb is plane, and is divided into five segments, of an ovato-orbicular figure, with convex unguet; the stamina are five erect filaments, shorter than the corolla, and hairy in the lower part; the anthers are simple; the germen is globose; the style is filiform, and lightly declinate; the stigma is capitate; the fruit is a globose capsule, containing only one cell, and dividing horizontally into two hemispheres; the seeds are numerous, and angular; the receptacle globose and large.

1. *Anagallis foliis ovatis, indivisis.*
The oval, undivided-leaf *Anagallis*.

Red Pimpernel.

The root is small, oblong, white, and furnished with a few fibres; the stalks grow to four or five inches long, sometimes to ten or twelve; they are not erect, but trail on the ground, and are square, smooth, of a pale green, and hollow: the leaves stand in pairs; they have no pedicles, but are an inch long, and more than half as much broad, of a dusky green on the surface, and spotted with red underneath. The flowers stand on slender pedicels, of an inch long, growing out of the axils of the leaves; they are small and red, with us, sometimes white; in many other parts of Europe they are blue.

The plant is common in our corn-fields and gardens. C. Bauhine calls it, *Anagallis flore Phoeniceo*. It is esteemed an alexipharmic and sudorific, but is little used.

2. *Anagallis*

2. *Anagallis foliis lanceolatis.**Lanceolate-leaved Anagallis.*

The root is a cluster of white fibres; the stalks are a foot, or more, in length, of a pale green, and hollow: the leaves stand usually two, sometimes three, sometimes, but rarely, more, at a joint; they are oblong, very narrow, and lanceolate. The flowers stand on long pedicels, produced from the axils of the leaves, usually one from each; the flowers are larger than those of the former species, and of a beautiful blue.

The place whence this plant originally came is unknown; Morisius sent Clusius some seeds of it from Cadix, and, from the plants raised from them, the stock has been ever since kept up in our gardens.

DIAPENSIA.

THE calyx is a perianthium, composed of eight leaves; the five interior ones disposed in a circle, the other three laid in an imbricated manner, all of them equal in size, of an oval figure, obtuse, erect, and permanent: the corolla consists of a single petal, and is of the hypocateriform kind; the tube is cylindric, open, and of the length of the cup; the limb is divided into five segments, obtuse and plane; the stamina are five erect, linear, compressed filaments, short, and placed at the segments of the petal; the anthers are simple; the germen is roundish; the style is cylindric, and of the length of the stamina; the stigma obtuse: the fruit is a capsule, formed of three valves, containing three cells, and the seeds are numerous and round.

Of this genus there is but one known species.

DIAPENSIA.

The root consists of a number of white fibres, and is perennial: the radical leaves are very numerous, very narrow, obtuse, and linear, extremely thin, and of a pale green colour: the stalk is procumbent, an inch or two long, and ramose, producing tufts of leaves, and clusters of fibres at every joint; the peduncles which support the flowers are slender, naked, scarce an inch in length, and of a pale green colour; every peduncle sustains only a single flower, which is large and white.

It is a native of Denmark, Sweden, and Lapland, and we have it on some of the Northern mountains in our own kingdom. C. Bauhine calls it, *Sedum Alpinum gramineo folio, lacteo flore.* Tournefort, *Androsace Alpina perennis flore singulari.*

HYDROPHYLLUM.

THE calyx is a perianthium, divided into five subulated segments, patent, permanent, and nearly as long as the corolla: the corolla consists of a single, campanulated petal, lightly divided into five erect, obtuse, emarginated segments: the nectarium is a fissure, closed by two longitudinal, connivent lamellæ, situate between the segments, and below the middle of the petal; the stamina are five subulated filaments, longer than the corolla; the anthers are incumbent, and oblong; the germen is of an ovato-acuminated figure: the style is subulated, and of the length of the stamina: the stigma is bifid, acute, and patent. The fruit is a globose capsule, formed of two valves, and having only one cell: the seed is single, round, and large.

This genus comprehends the *Hydrophyllum* of Tournefort, and the *Dentaria* facie of Morison.

There is only one known species of it.

HYDROPHYLLUM.

The root is oblong, moderately thick, and of a reddish colour: the radical leaves are pinnated, small, but like those of the *dentaria*, consisting of two or three pair of oblong pinnæ, and a long, terminatory one, or rather of so many deep segments, resembling pinnæ, for they are not divided quite to the rib: the stalk is round, slender, and of a pale green colour; it grows to six inches high, and has on it's top five

or

or six flowers, large, and much like those of the echium; the colour a deep blue, sometimes a pale blue, sometimes red, sometimes white.

It is a native of Germany, and grows in moist places. Morinus gave it the name of *Hydrophyllon*; others have called, it *Dentaria affinis*, *echii flore*.

THEOPHRASTA.

THE calyx of the *Theophrasta* is a small, permanent perianthium, divided into five obtuse segments, making obtuse angles also with one another: the corolla consists of a single petal, of a campanulated figure, divided, in the manner of the cup, into five obtuse segments at the rim: the stamina are five subulated filaments, shorter than the corolla: the antheræ are simple: the germen is oval: the style is subulated, and shorter than the corolla: the stigma is acute. The fruit is a large, globose capsule, containing only one cell: the seeds are numerous, and of a roundish figure, and are affixed to every part of the receptacle.

This genus comprehends the *Eresia* of Plumier; it is an American, of which there is but one species, and that wanting no farther description.

PATAGONULA.

THE calyx is a very small, permanent perianthium, divided into five segments: the corolla is composed of a single petal: there is scarce any tube: the limb is plane, and divided into five oval, acute segments: the stamina are five filaments, of the length of the corolla: the antheræ are simple: the germen is of an oval, acute figure: the style is bifid at the end, and it's divisions are bifid again; it is of the length of the stamina, and permanent: the stigmata are simple. The fruit is an oval, acuminate capsule, placed on a very large cup, with oblong, emarginated segments; this conformation of the cup is the essential distinction of the genus.

There is but one species of this genus; it is an American, and needs no farther description than is contained in the general character.

SPIGELIA.

THE calyx is a monophyllous perianthium, small, permanent, and divided into five segments: the corolla consists of a single petal, of the shape of a funnel: the tube is much longer than the cup, and is narrower below than above: the limb is patent, and divided into five segments; the segments broad, and acuminate: the stamina are five simple filaments; the antheræ are simple: the germen is composed of two globes: the style is single, subulated, and of the length of the tube: the stigma is simple: the perianthium consists of two globose fruits, growing together, and situate on the cup: the seeds are roundish, very small, and numerous.

This genus comprehends the *Arapabaca* of Plumier; an American, needing no farther description than is contained in the general character.

AZALEA.

THE calyx is a small, erect, acute, coloured, and permanent perianthium, divided at top into five segments: the corolla consists of a single petal; this is twice as long as the cup, and is erect, patulous, narrow at the base, and at the summit divided into five segments, the sides of which bend backwards: the stamina are five filiform filaments, inserted into the receptacle, and free: the antheræ are simple: the germen is roundish: the style is filiform, of the length of the corolla, and permanent: the stigma is obtuse. The fruit is a roundish capsule, formed of five valves, and containing five cells: the seeds are numerous, and roundish: the figure of the petal is, in some, infundibuliform, in some campaniform.

1. *Azalea ramis diffusis procumbentibus.**The diffuse, procumbent Azalea.*

The root is woody, fibrous, and perennial: the stem is woody, and of the thickness of a goose-quill; it soon divides into a number of branches, and these, as well as itself, all lie on the ground, spread in an irregular manner. The whole plant seldom exceeds ten or twelve inches in length, and often is as much in extent: the leaves stand in pairs, very close to each other; they are of the size and shape of those of thyme, and are green all winter; they stand on very short pedicles, and their edges are reflex; they are of a deep green on the upper surface, paler below, and have a hollow, longitudinal line on the upper surface, and a prominent one below, formed by the main rib. The flowers usually stand three together, at the ends of the branches, each on it's own short, red pedicle. The calyx is red; the flower moderately large, and of a bright red.

It is frequent in Denmark, Sweden, and Lapland, over-running whole tracts of land, as the erica does with us. The whole plant lies as flat on the earth as a pressed specimen in a hortus siccus, yet it does not take root from the branches. Tournefort calls it, *Chamaerhododendros Alpina serpyllifolia*; Rudbeck, *Lychnis Alpina frutescens minima flore ruberrimo*; C. Bauhine, *Anonymus fruticosus foliis erice baccifera*.

2. *Azalea ramis compositis suberectis.**The composite, and erect-branched Azalea.*

The root is fibrous, woody, and perennial; the stem is woody, tough, and shrubby: it grows to six or eight inches high. The branches are numerous, and three or four often grow from the same point of the stem, from the top of the branch of the preceding year; they stand very distant; and are covered with a rough bark, which, after a time, falls off, a new one appearing under it ready formed: the leaves are small, of an elliptic figure, rigid, and have their edges bent backward. The middle rib forms a cavity on the upper surface of the leaf, and is prominent below; the upper surface is of a deep green, sprinkled over, as it were, with hard, round prominences: the under surface is whitish, and has more of these protuberances, but they are very small, and of a ferrugineous colour. The leaves stand in clusters, ten or twelve together, at the tops of the branches; the other part being naked. The flowers rise from the midst of these tufts, usually three from each; they are long, and of a beautiful bluish-purple, or violet, colour, and stand each on a short, reddish pedicle: the calyx is green.

This beautiful plant is a native of the mountains of Lapland. Linnaeus, who discovered it, supposed it, at that time, to be the *Chamaerhododendros Alpina glabra* of Tournefort, the *Ledum Alpinum foliis ferrugineis rubigine nigricantibus*; but he afterwards allowed this to be an error, and the plant a new species.

OPHIORRHIZA.

THE calyx is an erect perianthium, small, and divided into five segments at the edge: the corolla is oblong, narrow at the base, and divided also into five short segments at the edge: the stamina are five moderately long, slender filaments; the anthers are tumid and short: the germen is bifid: the stigmata are two, and the fruit a capsule consisting of two lobes; the seeds are numerous, and roundish.

This plant approaches greatly to the azalea, but it's bifid germen and bilobous fruit sufficiently distinguish it both from this and all the other genera of this class.

PLUMBAGO.

THE calyx is a scabrous, pentagonal perianthium, formed of one leaf, of an ovato-oblong, tubulated figure, divided into five segments at the extremity, and permanent: the corolla consists of a single petal, of an infundibuliform shape: the tube is cylindric, but narrowest above, and longer than the cup: the limb is divided into five oval, erecto-patent segments: the stamina are five tubulated filaments, free, and placed within the tube of the corolla; and annexed, at their bases, to as many obtuse squamæ: the anthers are small, oblong, and versatile: the germen is oval, and very small: the style is simple, and of the length of the tube: the stigma is slender, and divided into five parts: there is no pericarpium: the seed is single, of an oval figure, and included.

Z z z

Plumbago

Plumbago foliis petiolatis.
The Plumbago, with petiolated leaves.

The root is oblong, moderately thick, and of a very acrid taste; the radical leaves are roundish, three inches long, and of a deep green colour: the stalk rises to three or four feet high, but is not very robust, and seldom perfectly erect. It is round, articulated, woody, but tortuous, and of a green, shining surface: it usually grows among shrubs, and is, in part, supported upright by them. The leaves stand on the stalks, on very short pedicles; they are roundish, sometimes rather oblong, two inches in length, and of a deep shining green, smooth on the surface, and very thin: the flowers stand in spikes at the top of the stalk and branches; they have no pedicles, but adhere by the base of the cup, which is viscid, striated, and, as it were, spinose: the flowers are white, and much like those of the common white *Lychnis*, only somewhat smaller.

It is a native both of the East and West Indies; we have it frequently in our gardens. Ray calls it, *Dentillaria lychnoides*. *Sylvestica scandens flore albo*, Commelin. *Lychnis lodiaca spicata fructibus lappaceis oblongis, radice urente*.

The other species of the *Plumbago* are, 1. The beet-leaved, American *Plumbago*; and, 2. The smaller-leaved, scandent, and prickly, American *Plumbago*, with smaller flowers.

P H L O X.

THE calyx is a cylindric but decaangular perianthium, formed of a single leaf, divided into five segments at the edge, and permanent: the corolla consists of a single petal, and is of the hypocrateri-form kind: the tube is cylindric, and three times the length of the cup, narrow below and crooked: the limb is plane, and divided into five roundish, equal, obtuse segments, shorter than the tube: the stamina are five filaments placed in the tube of the flower, two of which are longer, one shorter than the other two: the anthers are placed in the mouth of the corolla: the germen is conic; the style is filiform, and of the length of the stamina: the stigma is trifid and acute: the fruit is an oval, but somewhat trigonal, capsule, formed of three valves, and containing three cells: the seeds are single and oval.

This genus comprehends the *Lychnidea* of Dillenius.

1. *Plox foliis lineari-lanceolatis caule recto, corymbo terminali.*

The narrow, lanceolate-leaved Plox, with a cluster of flowers terminating the stalk.

The root is oblong, slender, white, and furnished with a few fibres; the radical leaves are three inches long, narrow, and pointed at the ends, of a pale green colour, and thin: the stalk is round, smooth, and robust; it rises to two feet high, and toward the top has some branches: the leaves stand two at a joint; they are an inch and a half long, narrow, and pointed at the ends, of a very pale green, and smooth on the surface: the flowers stand in a kind of umbels at the tops of the stalks and branches; they are large and white, sometimes reddish.

The plant is common in Virginia, and many other parts of North America; we have it in our gardens. Dillenius calls it, *Lychnidea folio melampyri*.

2. *Plox foliis ovatis, corymbo terminatrice.*

The oval-leaved Plox, with terminatory clusters of flowers.

The root is oblong, thick, and woody, white, and furnished with a number of fibres. The radical leaves are four inches long, very numerous, of a pale green, smooth and even at the edges, and near three inches in breadth: the stalk rises to two or three feet high; the leaves stand in pairs, at three or four inches distance; they are of an oval figure, and obtusely pointed, two inches and a half long, and more than an inch and a half in breadth. The stalk towards the top sends out six or eight branches in pairs, opposite

opposite to each other, from the axis of the leaves: these all rise to the height of the main stalk, and are terminated by clusters of large white flowers, together forming a surface, often of ten or twelve inches.

This is frequent in Pennsylvania, whence we have often received it from John Bartram.

CONVOLVULUS.

THE calyx is a very small perianthium, of an obtuse, oval, connivent figure, formed of one leaf, divided into five segments. The corolla consists of a single petal; the shape is campanulated and patent; it is large, plicated, and very lightly divided at the rim. The stamina are five subulated filaments, of about half the length of the corolla; the antheræ are oval and compressed: the germen is roundish; the style is filiform, and of the length of the stamina: the stigmata are two, oblong and broad. The fruit is a capsule of a roundish figure, contained within the cup, and formed of one, two, or three valves: the seeds are two, roundish and often acute: the corolla is usually cut in ten places; but there are species, in which these crenæ are but five.

This genus comprehends the *Convolvulus* of authors, and the *Volubilis* of Dillenius. The *Volubilis* has in a cluster some larger, others smaller, flowers; and the seeds are elated, but these are specific, not generical, distinctions.

1. *Convolvulus foliis sagittatis peltice truncatis.*

The *Convolvulus*, with sagittated leaves truncated behind.

Great Bind-
weed.

The root is oblong, white, and creeping, of the thickness of a crow-quill, and of an acrid taste: the stalks are round, slender, and infirm, but by the help of bushes, on which it climbs, they grow sometimes to eight or ten feet high: the leaves stand singly, and at considerable distances; their pedicles are an inch long; they are broad, sagittated at the base, and terminate in a point: their colour is a pale green, their texture thin, and the two points at the base are truncated. The flowers stand singly on long pedicles, arising from the axis of the leaves; they are very large, and of a snowy white.

The plant is common in our hedges. C. Bauhine calls it, *Convolvulus major albus*.

2. *Convolvulus calycibus tuberculatis pilosis.*

The *Convolvulus*, with tuberculose, hairy cups.

Round-leaved,
blue Bindweed.

The root is oblong, creeping, of a reddish colour, and of the thickness of a crow-quill: the stalk is round, slender, and tortuous, hairy, and usually of a reddish colour, and, when properly supported, will grow to four or five feet high: the leaves stand singly, and at considerable distances on the stalks; they have pedicles of an inch long, reddish and hairy: their shape is very uncertain; they are sometimes roundish, sometimes angulated, like the leaves of ivy, and this in a greater or lesser degree: they are always of a pale green and hairy, both on the upper and under surfaces. The flowers are disposed in a very singular manner; a common pedicle of three inches long rises from the axis of a leaf, and at the top of this stand three other pedicles, each an inch long, and each supporting a single flower: the flowers are large, and of a beautiful purple colour: the cups blackish, hairy, and full of little tubercles: the flowers are only open in the morning and evening; they shut up, when the sun is out; hence some have called the plant *Flos noctis*.

It is a native of Syria, and many other of the warmer countries. Its leaves differ so extremely in figure, that they have misled many authors into the describing the plant three times over, as if of so many different species. C. Bauhine calls it, in the round-leaved state, *Convolvulus purpureus folio subrotundo*; in its angulated-leaved state, *Convolvulus hederaceus cæruleus anguloso folio*; and Dillenius, when the leaves are yet more angulated, calls it, *Convolvulus cæruleus hederaceo folio magis anguloso*. It usually has round leaves in Syria; ivy-like leaves in many parts of Asia, Africa, and America; and the more angular-leaved plants have been from Æthiopia. What shows,

shews, however, that these are only varieties of the same species, is, that the leaves alter their form, even in our own stoves.

3. *Convolvulus foliis lanceolato-ovatis nudis, caule recto, floribus solitariis.*

The Convolvulus, with oval-lanceolated, naked leaves, an erect stalk, and single flowers.

The root is oblong, slender, and of a brownish colour: the stalks are numerous, round, and firm; they grow to a foot, or eighteen inches, in height, and stand erect; they are hairy, and divided into many branches. The leaves stand singly, but very close to one another; they are oblong, and moderately broad: the lower ones are often four inches long, and an inch and a half broad; they grow smaller as they come nearer the top of the stalk, and are a little hairy. From the axæ of almost every leaf there rises a pedicel very slender, and near an inch long; on the top of which stands a single, large, and very beautiful blue flower, but variegated in a very elegant manner: about the edges the blue is very deep; within it is somewhat paler, farther toward the center of the flower it becomes yellow, and the very central spot is white.

It is a native of Spain and Portugal; but we have it frequent in our gardens. C. Bauhine calls it, *Convolvulus cæruleus peregrinus folio oblongo*. Morison, *Convolvulus flore triplici colore insignito*.

The other species of the *Convolvulus* are very numerous: the more singular are, 1. The auriculate-leaved, purple *Convolvulus*. 2. The white Indian *Convolvulus*. 3. The violet-leaved *Convolvulus*. 4. The yellow, many-flowered *Convolvulus*. 5. The round-leaved, white *Convolvulus*. 6. The great purple, heart-leaved, American *Convolvulus*. 7. The thick-leaved, Ceylon *Convolvulus*. 8. The little, field *Convolvulus*. 9. The little, branched *Convolvulus*. 10. The little African *Convolvulus*. 11. The Syrian *Convolvulus*. 12. The linear-leaved, erect *Convolvulus*. 13. The creeping, silvery, acaulous *Convolvulus*. 14. The umbellated, erect, silvery *Convolvulus*. 15. The pilosella-leaved *Convolvulus*. 16. The nummularia-leaved *Convolvulus*. 17. The great, alated, Indian *Convolvulus*. 18. The laciniated-leaved *Convolvulus*. 19. The cinque-foil *Convolvulus*. 20. The tripartite-leaved *Convolvulus*. 21. The betony-leaved *Convolvulus*. 22. The laciniated, silvery-leaved *Convolvulus*. 23. The sagittated, Grecian *Convolvulus*. 24. The broad-leaved, erect, hairy *Convolvulus*. 24. The oblong, hairy-leaved *Convolvulus*, with bright red flowers.

I P O M O E A.

THE calyx is a very small, oblong perianthium, divided into five segments, and permanent: the corolla consists of a single petal, of an infundibuliform shape; the tube is nearly cylindric, and very long; the limb is patent, and is divided into five semi-lanceolate, plane segments; the stamina are five tubulated filaments, nearly of the length of the corolla: the antheræ are roundish; the germen is roundish; the style is filiform, and of the length of the corolla; the stigma is capitate and trifid; the fruit is a roundish capsule, containing three cells; the seeds are oval, and are several in each cell.

1. *Ipomoea foliis pinnatifidis linearibus, floribus solitariis.* American
The linear, pinnatifid-leaved Ipomoea, with single flowers. Balsmine.

The root is oblong, creeping, and woody: the stalks are woody, and grow to a great length; they are weak, however, and must be supported. The leaves stand singly on long pedicles, of a deep red colour; they are very beautifully divided into a number of oblong, and very narrow, segments, down almost to the middle rib, so as to appear pinnated. The number of segments is often very great, and the whole leaf is terminated by a single segment or point: the flowers are large, and of a beautiful bright red colour.

It is a native both of the East and West Indies. J. Bauhine and others call it simply, *Quamoclit*; *Columna*, *Convolvulus pennatus exoticus rarior*; C. Bauhine, *Jasminum millefolii folio*.

2. *Ipomoea foliis palmatis, lobis septenis lanceolatis integerrimis.*

The palmated-leaved Ipomoea, with seven whole lanceolated lobes. Spanish Woodbine.

The root is tuberous, roundish, and of the bigness of a man's head: the stalk is angular, firm, and tortuous; it winds itself about trees, and grows thus to twenty feet high: it is very much branched, and of a brownish colour. The leaves stand singly at four inches distance from one another: their pedicles are two inches, or more, in length; the leaf is divided into seven oblong segments; they are narrowest at the base, broader in the middle, and thence smaller again to the point: the middle segment is four inches long, and an inch broad; the others are gradually smaller, as they recede from it: the flowers are large, of a bright yellow colour, very beautiful, and sweet-scented: they stand singly on pedicles of three or four inches long, arising from the axils of the leaves.

It is a native of Jamaica, but we have it in some of our stoves. Sir Hans Sloane calls it, *Convolvulus major heptaphyllus flore sulphureo odorato*.

The other species of *Ipomoea* are, 1. The cordated-leaved, many-flowered *Ipomoea*. 2. The hairy-stalked, digitated-leaved *Ipomoea*. 3. The scarlet, digitated, narrow-leaved *Ipomoea*. 4. The great cordated-leaved *Ipomoea*. 5. The umbellated, scarlet *Ipomoea*. 6. The angulated-leaved, small, scarlet-flowered *Ipomoea*. 7. The solanum-leaved *Ipomoea*, with scarlet flowers.

POLEMONIUM.

THE calyx is a cyathiform perianthium, composed of a single leaf, divided into five segments, acute and permanent: the corolla consists of a single petal; the tube is shorter than the cup, and is shut up by five valves placed at it's top; the limb is large and plane, divided into five roundish, obtuse segments: the stamina are five filaments, inserted in the valves of the tube; they are filiform, inclined, and shorter than the corolla. The anthers are roundish and incumbent; the germeo is of an oval figure, and acute; the style is filiform, and of the length of the corolla; the stigma is bifid and revolute: the fruit is a trigonal, covered capsule, approaching toward an oval form, composed of three valves, and containing three cells: the seeds are numerous, irregular, and acute.

Of this genus there are only two known species.

1. *Polemonium calycibus glabris.*
The smooth-cupped Polemonium.

Jacob's
Ladder.

The root is oblong, slender, whitish, pyxidated, and creeping: the radical leaves are very beautifully pinnated; they are four or five inches long, and are composed of twelve, or more, pairs of pinnae, placed very close to one another, and terminated by an odd one: the pinnae are half so inch long, and moderately broad, pointed at the end, and of a deep green colour; these leaves remain green the whole winter. The stalk is moderately thick, of a pale green colour, striated and hollow; it usually runs up singly to two feet high, and near the top sends out some lateral branches: the leaves stand alternately, and are three inches long, and an inch and a quarter broad in the whole. They are beautifully pinnated like the radical leaves; the pinnae very thick-set, broadest at the base, and narrower to the point. At the top of the stalk and branches stand clusters of very beautiful flowers, large, of a deep blue, and sometimes a white, colour.

It is a native of Denmark, Sweden, and other northern countries; I have met with it wild in Lancashire, but would not be too confident that it was native there, as we have it frequently in our gardens, and it might be thrown out of some of them. Tournefort

nesort calls it, *Polemonium vulgare caeruleum*; C. Bauhine and others, *Valeriana Græca*.

2. *Polemonium calycibus lanatis.*

The woolly-cupped Polemonium.

The root is composed of a multitude of long fibres moderately thick, and very tough; the radical leaves are six inches long, and composed of a great number of pairs of pinnae, set crowding on one another with an odd pinna at the end; they are about half an inch long, not a third of an inch broad, and pointed at the end. The stalk is round, smooth, slender, hairy, and hollow; it usually grows single, and is about a foot and half high. All the way up there stand pinnated leaves, like the radical ones, but much smaller; the upper ones very small. The flowers stand in clusters, and are of a beautiful blue colour; they are twice as large as those of the former species, and their cups make a singular appearance, being woolly and white.

It is a native of Siberia, and has not been described before. Linnaeus mentions it, under the name of *Polemonium calycibus lanatis*.

Class the Fifth Order the First.

Division the Third.

Pentandria Monogynia, with monopetalous flowers, and the germen placed under the corolla.

CAMPANULA.

THE calyx is a perianthium, divided into five parts, erecto-patent, acute, and placed on the germen: the corolla consists of a campanulated, single petal, the base broad and impervious; the limb tightly divided into five segments, broad, acute, and patulous: the nectarium is situate in the bottom of the corolla, and is formed of five acute, connivent valves; the stamina are five very short, capillary filaments, inserted on the summits of the valves, which form the nectarium: the anthers are longer than the filaments, and compressed: the germen is angular, and placed below the receptacle; the style is filiform, and longer than the stamina: the stigma is oblong, thick, divided into three parts, and those bent backwards. The fruit is an angulated capsule, of a figure approaching to round, containing either three or five cells, and having so many foramina in the sides for letting out the seeds. The seeds are numerous and small, and the receptacle fixed and columnar.

This genus comprehends the *Campanula*, *Trachelium*, *Rapunculus* and *Medina* of Knaut, and the *Speculum Veneris*. The figure of the pericarpium is not perfectly determinate: in the *Trachelium* it is scabrous, hairy, and trilocular; in the *Rapunculus* it is smooth, oval, and trilocular; in the *Medius* it has five valves, and is quinquelocular; and, in the *Speculum Veneris*, it is columnar, prismatic, and trilocular. As the rest of the characters, however, are alike in all, these can properly be only made specific distinctions, not generical, as Ray, Knaut, and others have made them.

1. *Campanula foliis radicalibus reniformibus, caulibus linearibus.*

The Campanula, with the radical leaves kidney-shaped, the others linear.

Round-leaved
Bell-flower.

The root is oblong, thick, white, and of a pleasant taste: the radical leaves are eight or ten in number; they are of a roundish, or rather kidney-like, shape, of the breadth of a sixpence, of a deep green colour, and have pedicles of an inch long; the stalk is round, smooth, and six or eight inches high; at the bottom it has four or five leaves of an angulated, oblong figure, somewhat like those of ivy; the rest are placed irregularly, all the way up the stalk, pretty close to one another; they have no resemblance of the radical or lower leaves, but are an inch long, narrow, grassy, and pointed

pointed at the ends; at the top of the stalk stand four or five flowers, large, and of a beautiful blue, sometimes a reddish, sometimes a white, colour.

It is common with us by way-sides. C. Bauhine calls it, *Campanula minor rotundifolia vulgaris*; and, describes twice afterwards, under the names of *Campanula minor rotundifolia floribus albis*, and *Campanula Alpina linifolia cerulea*.

2. *Campanula foliis lanceolatis, caulinis acute serratis, floribus paniculatis nutantibus.*

The lanceolated, serrated-leaved *Campanula*, with nutant, paniculated flowers.

The root is oblong, white, moderately thick, and esculent; the radical leaves stand on pedicles of three inches long; they are two inches and a half long, an inch and a half broad, pointed at the extremity, and of a deep green colour. The stalk is rigid, hollow, and two feet high: the leaves stand singly on it; their pedicles are moderately long; their shape like that of the common stinging nettle, but narrower; they are sharply serrated at the edges, and, before the flowers appear, there is a tuft of these leaves on the stalks like a rose, but these, when the flowers are ripe, are disposed, like the rest, along the stalk: they are all smooth, of a deep green colour, and rigid to the touch: the flowers stand in a kind of panicles; they are small, blue, and nutant.

This is a native of Russia, but we have it in some of our gardens. Amman calls it, *Campanula urticæ foliis angustioribus glabris rigidisque*.

3. *Campanula capsulis quinquelocularibus testis, calycis sinibus reflexis.*

The quinquelocular fruited, long-leaved *Campanula*.

Coventry
Bells.

The root is large and oblong, white, esculent, and of a very pleasant taste; the radical leaves are oblong, moderately broad, crenated at the edges, and terminate in a point: they stand on pedicles of two inches long, and are of a pale green, and hairy; the stalk grows to three feet high: the leaves stand irregularly on it, and are oblong, narrow, hairy, and crenated like those of the root; the tops of the branches support a number of flowers, large, oblong, ventricose, and of a beautiful blue, sometimes purplish, and sometimes white, colour.

It is a native of Germany and Italy, and is very common in our gardens. Camera-rius calls it, *Medium*; Dodonæus, *Viola Mariana*; C. Bauhine, *Campanula hortensis folio et flore oblongo*.

4. *Campanula foliis undatis, radicalibus lanceolato-ovatis panicula coarctata.*

The undulated-leaved *Campanula*, with a narrow panicle.

Rampion.

The root is long, white, and thick, sometimes simple, sometimes multiple: the radical leaves are numerous, oblong, broad, and of a bright green colour: the stalk rises to two or three feet; it is slender, striated, angular, and hairy: the leaves stand thick upon it without any order; they are long and narrow, broad at the base, where they adhere to the stalk without any pedicle, and thence gradually narrower to the point, and very finely serrated at the edges: toward the top the stalk sends up many branches, and at the tops of these stand the flowers; they are large, beautiful, and of a fine blue, with lines of red; they are deeply divided into five segments, and each segment has three red lines or striæ on it: the whole plant is full of a milky juice; it's root is eaten raw.

It is a native of Germany, but is frequent in our gardens. C. Bauhine calls it, *Rapunculus esculentus*; Dodonæus, *Rapunculum*.

5. *Campanula caule angulato, calycibus pedunculatis simplicibus, laciniis ciliatis.*

The angular-stalked Campanula, with single pedunculated cups, with ciliated segments.

Canterbury
Bells.

The root is oblong, white, and esculent; the radical leaves are large, broad, cordated, and serrated at the edges: the stalk is large, angular, hairy, and two or three feet high: the leaves stand alternately on it, and much resemble those of the common stinging nettle; the lower ones have long pedicles, the upper shorter: the flowers stand on pedicles arising from the axæ of the leaves; they are large, blue, and hairy within.

We have this, in many parts of England, by road-sides, and in dry pastures. Clusius calls it, *Trachelium vulgare*; Dodonæus, *Cervicaria major*; C. Bauhine, *Campanula foliis urticæ*.

6. *Campanula caule subdiviso, foliis oblongis crenatis, calycibus corolla longioribus.*

The divided-stalked, oblong, crenated-leaved Campanula, with long cups.

Glenus Look-
ing-glass.

The root is small, oblong, white, single, and furnished with large fibres: the radical leaves are an inch long, near half an inch broad, and crenated at the edges: the stalk is weak, eight or ten inches high, and divided into several branches, almost immediately from the root, and these often divided again into others: the leaves stand irregularly; they are short, small, crenated round the edges, and obtuse at the ends: the flowers grow from the axæ of the leaves; they are large, and of a beautiful purple colour.

It is a native of England, and is frequent in the corn-fields of some parts of the kingdom. Ray calls it, *Speculum Veneris*; C. Bauhine, *Campanula arvensis erecta*.

The other species of *Campanula* are very numerous. The principal are, 1. The great, broad-leaved, blue *Campanula*. 2. The narrower, nettle-leaved *Campanula*. 3. The tall, pyramidal *Campanula*. 4. The tuberous, striplex-leaved *Campanula*. 5. The hoary-leaved *Campanula*. 6. The Spanish *Campanula*, with divided leaves. 7. The long, livid-leaved, Alpine *Campanula*. 8. The round-headed *Campanula*. 9. The teucrium-leaved *Campanula*. 10. The echium-leaved, hairy-flowered *Campanula*. 11. The tragopogon-leaved *Campanula*. 12. The peach-leaved *Campanula*. 13. The single-flowered *Campanula*. 14. The patulous-flowered, rigid-leaved *Campanula*. 15. The daisy-leaved *Campanula*. 16. The flax-leaved *Campanula*. 17. The ivy-leaved *Campanula*. 18. The serpyllum-leaved *Campanula*. 19. The divided-leaved *Campanula*. 20. The great-pentagonal *Campanula*, with long and broad leaves. 21. The perfoliate, pentagonal *Campanula*. 22. The pyramidal-spiked *Campanula*. 23. The corniculate *Campanula*. 24. The scabious-headed *Campanula*. 25. The procumbent, long-flowered *Campanula*. 26. The long, divided-leaved *Campanula*. 27. The round-leaved, small-flowered *Campanula*. 28. The laciniated-leaved *Campanula*, with hard, woolly fruit. 29. The ragwort-leaved *Campanula*. 30. The single-flowered, lychnis-leaved *Campanula*. 31. The crenated-leaved, patulous-flowered *Campanula*. 32. The poppy-headed *Campanula*. 33. The dwarf *Campanula*, with flowers only on one side.

ROELLA.

THE calyx is a permanent perianthium, formed of one leaf of a turbinated figure, divided into five large lanceolated, acute, dentated segments, and placed on the germen: the corolla consists of a single petal, and is deciduous; it is of an infundibuliform shape. The tube is a little shorter than the cup: the limb is erectopate, divided into five parts, and longer than the cup: the nectarium is formed of five squamæ, placed in the bottom of the flower, and connivent: the stamina are five tubulated filaments, situate on the nectarium: the anthers are tubulated and connivent,

nivent, of the length of the filaments, and of the height of the cup: the germen is oblong, and placed under the receptacle of the flower: the style is filiform, and of the length of the stamina: the stigmata are two, oblong, depressed, and patent: the fruit is a cylindric capsule, shorter than the cup, composed of a single valve, but containing two cells, and coronated with the cup, grown larger than at first: the seeds are numerous and angular.

PHYTEUMA.

THE perianthium is formed of a single leaf, divided into five segments, erecto-patent, and placed on the germen: the corolla is composed of a single petal, stellated, patent, and divided into five parts; the segments of a linear figure, acute and bent backwards: The stamina are five filaments, shorter than the corolla: the anthers are oblong; the germen is placed below the receptacle: the style is filiform, of the length of the corolla, and crooked: the stigma is tripartite, oblong, and revolute: the capsule is roundish, and contains three cells; the seeds are numerous, small, and roundish.

1. *Phyteuma foliis laciniatis, floribus pyramidalis.*

The lacinated-leaved Phyteuma, with pyramided flowers. **Cretic Rampion.**

The root is large, oblong, white and esculent; the radical leaves are large, broad, like those of succory in shape, and lacinated at the edges: they stand in large clusters, and are of a deep green above, and somewhat purplish below: the stalk is round, striated, and thick; it grows to three or four feet high: the leaves stand close on it, and are like the radical ones, but narrower: the flowers are moderately large, and of a beautiful purple; they stand on the tops of the stalks and branches, in thick pyramidal spikes.

This is a native of the eastern parts of the world, but we have it frequently in our gardens. C. Bauhine calls it, *Rapunculus Creticus* five *Pyramidalis altera*; J. Bauhine, *Rapunculus Creticus petromarula*; and Pontedera, *Petromarula* five *lactuca petraea*.

2. *Phyteuma foliis angustioribus, floribus glomeratis.*

The narrow-leaved, glomerated-flowered, Phyteuma.

The root of this species is very large, tuberous, and of a sweet taste; the radical leaves are of an oval figure, obtuse at the point, crenated round the edges, and of a deep green colour; they stand on very long pedicles: the stalk is slender, striated, and not more than six inches high: the leaves stand closely and irregularly on it; they are oblong, narrow, and crenated round the edges; at the top of the stalk stands a cluster of five or six of them, and from this rise the flowers, twenty, or more, of which are close set together, in a kind of head: they are moderately large, and of a beautiful purplish-blue colour.

This is a native of some of the northern parts of Europe; we have it also in our gardens. C. Bauhine calls it, *Rapunculus Alpinus corniculatus*.

The other species of *Phyteuma* are, 1. The blue-spiked, comose *Phyteuma*. 2. The yellow and narrow-leaved *Phyteuma*. 3. The long-leaved, orbicular-spiked *Phyteuma*. 4. The grassy-leaved *Phyteuma*. 5. The scabious-headed *Phyteuma*. 6. The narrow, dentated-leaved *Phyteuma*. 7. The narrow-leaved, many-flowered *Phyteuma*. 8. The long and rigid-leaved *Phyteuma*. 9. The tall, smooth, and rigid-leaved *Phyteuma*. 10. The roundish-leaved *Phyteuma*.

TRACHELIUM.

THE calyx is a very small perianthium, divided into five segments, and placed on the germen: the corolla consists of a single petal, of the infundibuliform kind: the tube is cylindric, very long and slender; the limb is patulous, small, and divided into five parts: the segments are oval and concave; the stamina are five capillary filaments, of the length of the corolla: the anthers are simple; the germen is of a triquetrous, but roundish, figure, and placed below the receptacle: the style is filiform, and twice as long as the corolla; the stigma is globose; the fruit is a roundish, ob-

totely trilobous capsule, composed of three valves, and containing three cells. The seeds are numerous and very small.

This genus comprehends the *Trachelium* of Tournefort; but the plants, commonly called *Trachelia* by others, are *Campanula*, already described in their places.

1. *Trachelium foliis ovatis serratis, caule umbella terminato.*

The oval, serrated-leaved Trachelium, with umbellated flowers.

The root is composed of a number of large fibres, thick, and full of a milky juice. The radical leaves stand on moderately long pedicles; they are of an oval figure, serrated round the edges, and of a deep green colour: the stalk rises to two feet high, and sends out a great number of branches: the leaves are oval, but somewhat narrower than the radical ones, serrated at the edges, and placed very close: the flowers are moderately large, and of a fine purple, and are disposed in a kind of umbels at the tops of the stalks.

It is a native of Italy, and is kept in some of our gardens. Tournefort calls it, *Trachelium azureum umbelliferum*; C. Bauhine, *Cervicaria valerianoides cerulea*.

2. *Trachelium folio longo laciniato, floribus glomeratis.*

The long, lacinated-leaved Trachelium, with glomerated flowers.

The root is composed of a number of large fibres, and full of a milky juice. The radical leaves are very long; they have no pedicles, and are cut in deeply at the edges: the stalk is round, striated, and hollow; it grows to four feet high: the leaves are oblong and broad, deeply cut in at the edges, and affixed to the stalk by a broad base. At the top stands a cluster of moderately large, and very long, white flowers.

It is a native of North America. Plumier calls it, *Trachelium Americanum longi folio, flore albo longissimo*.

The other species are, 1. The lacinated-leaved, violet-coloured, umbelliferous *Trachelium*. 2. The hairy *Trachelium*, with clusters of flowers from the axils of the leaves. 3. The little cluster-flowered *Trachelium*. 4. The little *Trachelium*, with flowers growing all along the stalks. This is an African.

S A M O L U S.

THE calyx is a perianthium, obtuse at the base, and divided into five narrow, erect, and permanent segments: the corolla consists of a single petal; the tube is very short, only of the length of the cup, and patulous: the limb is plane, and divided into five segments, and there are placed five, connivent squamulae at the base of the sinus of the limb: the stamina are five short filaments, each placed under one of the squamulae of the corolla: the antherae are connivent and covered: the germen is placed below the receptacle: the style is filiform, and of the length of the stamina; the stigma is simple; the fruit is an oval capsule, surrounded by the cup, and containing only one cell. The seeds are numerous, oval, and small.

Of this genus there is only one known species.

S A M O L U S.

The root is composed of a number of moderately thick, white fibres. The radical leaves are two inches long, and more than an inch broad: they are narrow at the base, and thence gradually extend in breadth, terminating in a rounded extremity; they are thick, smooth, of a pale green colour, and not serrated about the edges: the stalk is eight, or more, inches in height, round, of a pale green colour, and tolerably firm: the leaves stand alternately on it, at some considerable distance: they are shorter than the radical ones, roundish and affixed by the base, without any pedicle: the stalk is, toward the top, divided into several short branches: the flowers are small and white; they stand singly on pedicles of half an inch long each, and are not placed very near one another.

This is a native of England, and is not unfrequent in watery places. C. Bauhine calls it, *Anagallis aquatica rotundifolia non crenata*; J. Bauhine, *Samolus Valerandi*.

R O N D E -

RONDELETIA.

THE calyx is a permanent perianthium, formed of a single leaf, divided into five acute segments, and placed on the germen: the corolla consists of a single petal, and is of the infundibuliform kind: the tube is cylindric, and longer than the sepals, and ventricose at the top: the limb is divided into five roundish segments, which bend backwards: the stamina are five subulate filaments, nearly of the length of the corolla: the anthers are simple, the germen is roundish, and placed below the receptacle of the flower: the style is filiform, and of the length of the stamina: the stigma is obtuse. The fruit is a roundish, coronated capsule, containing two cells; the seeds are numerous and small.

This genus comprehends the *Rondeletia* and the *Chomelia* of Linneus: the characters of both are the same, and the words almost transcribed, so that it is surprising he did not see it. The *Rondeletia* is an American, described by Plumier; the *Chomelia* an Asiatic, figured in the *Hortus Malabaricus*, v. 2.

BELLONIA.

THE calyx is a perianthium, formed of a single leaf, divided into five lanceolated, acute segments, and permanent: the corolla consists of a single petal, and is of the rotated kind: the tube is very short, the limb large, and divided into five segments. The stamina are five very short, erect, subulate filaments: the anthers are short, erect, and connivent: the germen is placed below the receptacle of the flower: the style is subulate, strict, and longer than the stamina: the stigma is acute. The fruit is a capsule of a turbinato-oval figure, surrounded by the cup, and has a kind of rostrum, or beak, proceeding from it's top, formed by the connivent segments of the cup; it contains only one cell, in which are numerous, very small, roundish seeds.

It is an American, described by Plumier; the characters are sufficient to make it known, without a description.

GENIPA.

THE calyx is a short perianthium, forming a kind of undivided margin, or rim, on the top of the germen: the corolla consists of a single petal, of the rotated kind: the tube is very short, and of a funnel-like shape: the limb is large, divided into five segments, and patent: the segments are of an oval figure, and acute: the stamina are five subulate, reflex filaments, shorter than the corolla: the anthers are roundish and connivent: the germen is oval, and placed under the receptacle: the style is simple and short: the stigma is of an ovato-oblong figure, large, and of the length of the stamina: The fruit is a fleshy berry, of an oval figure, small at each end, truncated, and contains two cells, in each of which are a number of depressed, angulated seeds.

Of this genus there is only one known species, which the characters sufficiently distinguish, without a farther description.

CINCHONA.

THE calyx is a very small, permanent perianthium, formed of one leaf, divided into five segments at the edge. The corolla consists of a single petal, and is of the infundibuliform kind: the tube is cylindric and long; the limb is patulous, divided into five segments, serrated and acute. The stamina are five very small filaments: the anthers are oblong, and are placed within the tube of the corolla: the germen is roundish, and placed beneath the receptacle of the flower. The style is of the length of the corolla: the stigma is thick, oblong, and simple. The fruit is a roundish capsule, coronated with the cup, composed of two cells, and opening into two parts, longitudinally, from the base to the apex: the seeds are numerous, oblong, compressed, and margined.

Of this genus there is only one known species, which is the tree whose bark is the famous cortex Peruvianus.

CINCHONA.

CINCHONA. The Peruvian-bark Tree.

The Cinchona is a moderately large tree. Its root is very large and spreading, and covered with a thick bark, greyish on the outside, and yellowish within, which the Spaniards prefer for medicinal purposes before that of the other parts of the tree. The trunk grows to a foot in diameter, and is covered with a thick, rough, reddish-brown bark; the branches with a thinner and smoother; it sends out a number of branches, and grows to about eighteen or twenty feet high. The leaves stand opposite one another, in pairs; they are of an oblong-oval figure, sharp-pointed, and undivided at the edges; they are three inches long, two inches broad, moderately thick, and affixed to pedicles, from which a large rib extends along the middle, and sends off a number of oblique ramifications to the sides. The flowers stand in tufts, at the tops of the branches; they are small, and, before they are open, much resemble the flowers of lavender, both in shape and colour: the common peduncle of the whole tuft of flowers rises from the axis of some leaf, and soon divaricates into a number of smaller peduncles, each of which sustains on its top a single flower. The flower is of a dusky red colour on the outside, with a whitish down on it, but of a very bright and beautiful red within, especially toward the center, for it is somewhat paler about the edges. The stamina are yellow, the style white, the stigma greenish.

The tree is a native of South America, and is now where so plentiful as on the mountains about Loxa. Authors have called it, Quinquina, Chio-china, and Gaitia-perfic. Linæus has named it Cinchona, from the name of the viceroy of Peru who first occasioned its being brought into repute in Europe.

The virtues of the bark of this tree, in the cure of intermittent fevers, are so great, that they have thrown all the other febrifuges into neglect: it is also an excellent astringent and stomachic.

C O F F E E A.

THE calyx is a very small perianthium, divided into four segments at the edge, and placed on the germen; the corolla consists of a single petal, of an in fundibuliform shape: the tube is cylindric and slender, and many times longer than the cup; the limb is plane, longer than the tube, and divided into five segments of a lanceolated figure, with their edges bent backward. The stamina are five subtended stamina, placed on the tube of the corolla: the anthers are incumbent; of a linear figure, and of the length of the filaments. The germen is roundish, the style is simple, and of the length of the corolla: the stigmata are two, reflex, subulared, and thick. The fruit is a roundish berry, with an umbilicated point: the seeds are two, of an elliptico-hemispheric figure, gibbous on one side, plane on the other, and wrapped in a membrane.

Of this genus there is only one known species, the seeds of which are the Coffee we use.

C O F F E E A.

The Coffee Tree.

The root is composed of a number of long, and not very thick, ramifications. The stem is round, two or three inches thick, when well grown, and the tree ten, twelve, or fourteen high. It sends out branches from near the bottom, and thence all the way to the top; these stand two together, on the opposite sides of the trunk; they are, while young, very flexible, and covered with a whitish bark, but, as they grow older, this becomes of the same brown colour with that of the trunk. The leaves stand two at a joint; they are, in shape, much like the common bay-leaf, but larger, thinner, and softer, and of a paler green colour; they stand on short pedicles, and are four or five inches long, and two inches wide, broadest in the middle, narrow at the base, and terminate in a very long, narrow point; and they are somewhat undulated; they are of a pale green colour on the upper side, and whitish underneath. The flowers stand in little clusters, four or five together, in the axils of the leaves; they have a short pedicle, and are white, or a little reddish, moderately large, and of a sweet smell. The berries are green at first, afterwards red, and, when full ripe, black; they are of the bigness of a small cherry, and have within them a mucilaginous, fleshy matter, surrounding the two seeds, which, when separated from this pulp, and from their

their membranes, are what we call Coffee, and, after roasting, drink the decoction, or infusion, of.

The tree is a native of Arabia Felix and Ethiopia, and flowers all the year round. The fruit is gathered three times a year, in great abundance. Jussieu calls it, *Jasminum Arabicum lauri folio* cujus semen, apud nos, Caffé dicitur, but very improperly: it has not even the classical character of the jasmines.

The people of the eastern nations are as fond of Coffee for a drink as we are, but the great people among them make it only of the membranes surrounding the seeds, not of the seeds themselves, as we do. A decoction of the raw or unroasted seeds is a powerful diuretic and sudorific.

MORINDA.

THE common receptacle of the fructifications is roundish, and forms the flowers, which are sessile, into a kind of globular cluster. The perianthium is placed on the germen, and is divided into five segments, but it is so small as to be scarce perceptible. The corolla consists of a single petal, of an infundibuliform shape: the tube is cylindric: the limb divided into five segments, acute, and erecto-patent. The stamina are five compressed filaments, shorter than the corolla, and inserted under the divisions of it: the antheræ are simple: the germen is situate under the perianthium: the style is simple: the stigma is bifid, and thick. The fruit is a berry of a subovate, angular figure, truncated, containing only one cell, and every-where compressed by the adjoining ones: the seed is single, oleous, angular, and truncated.

This genus comprehends the *Phyllereastrum* of Vaillant, and the *Rojoc* of Plumier. It is a native of South America.

CONOCARPUS.

THE calyx is a very small, erect perianthium, formed of one leaf, and divided, at the extremity, into five subululated segments; it is placed on the germen, and is permanent. There is no corolla: the stamina are five: the germen is large, compressed, obtuse, thickest toward the point, and placed under the receptacle of the flower: the style is simple. There is no fruit, but the seed is naked and single, and has on each side a prominent, membranaceous margin. A number of the germina are arranged together, in an imbricated manner, and form a short and roundish cone; they appear like so many reflex squamæ.

This genus comprehends the *Rudbeckia* of Houston.

1. *Conocarpus foliis obverse ovatis.*
The obversely oval-leaved Conocarpus.

The But-
ton Tree.

The root is large and spreading: the tree grows thirty feet high: its trunk is often a foot in diameter. The bark is tolerably smooth, and of a pale grey colour. The branches are numerous and spreading: the leaves stand in pairs; they have short pedicels, and are of an oval figure, but with the broadest part at the extremity, and somewhat too narrow for their length: they are an inch and a half long, and about three quarters of an inch broad, smooth, and of a pale yellowish-green: the leaves toward the extremities of the branches differ from these, in that they are narrower, and pointed. The extremities of the branches divide into several twigs, on which stand oval clusters of flowers, which are small and red: when they are fallen, the head assumes a more conic figure.

The tree is frequent in Jamaica, and other of the American islands, principally about the coasts. Sir Hans Sloane calls it, *Alni fructu laurifolia arbor maritima*; Breynius, *Alno affinis Americana ligustri folio, flore rubro.*

2. *Conocarpus foliis lanceolatis.*
Lanceolate-leaved Conocarpus.

The root is large and spreading: the tree grows to forty feet high, and its trunk to fifteen inches in diameter. The leaves stand alternately, and are three inches long, of a lanceolated figure, and placed on pedicels of half an inch; they are broadest at

the base, and serrated round the edges. The flowers stand in clusters, forming a kind of short, conic heads; they are small, and of a beautiful yellow colour.

This is a native of Virginia, and other parts of America. Sir Hans Sloane calls it, *Alni fructu mori folio arbor, flore pentapetalo flavo*.

DIERVILLA.

THE calyx is a small perianthium, placed on the germen, and divided into five subulated, permanent segments. The corolla consists of a single petal: the tube is clavated, and gibbous at the base, with a gula impressed beneath: the limb is divided into five segments, and assumes a kind of bilabiate figure: the upper lip is divided into two parts, the lower into three, of which the middle one is the longest; all the segments are of a lanceolated figure, and bent backward. The stamina are five subulated filaments, of the length of the corolla: the anthers are oblong and erect. The germen is of an ovato-subulated figure, and is placed under the receptacle: the style is filiform, and of the length of the stamina: the stigma is peltato-capitated, convex, and hollow underneath. The fruit is a bivalve, bilocular capsule, of an ovato-subulated figure, and each cell contains several small, roundish seeds.

There is but one known species of this genus, and that so nearly allied to the *Lonicera*, that the generical characters only distinguish it, so that it needs no farther description.

LONICERA.

THE calyx is a small perianthium, placed on the germen, and divided into five segments: the corolla consists of a single petal: the tube is oblong, and gibbous downwards: the limb is divided into five segments, one of which is more deeply serrated than the rest, and all turn backward. The stamina are five subulated filaments, nearly of the length of the corolla: the anthers are oblong: the germen is roundish, and placed under the receptacle: the style is filiform, and of the length of the corolla: the stigma is obtusely capitated. The fruit is a roundish, umbilicated berry, containing two cells: the seeds are roundish, and compressed.

This genus comprehends the *Caprifolium*, *Periclymenum*, *Chamaecerasus*, *Xylosteum*, *Triosteospermum*, and *Symphoricarpos* of authors.

1. In the *Caprifolium* the lower segment of the corolla is twice as deeply separated as the rest, and the berry placed single. 2. In the *Periclymenum* the segments of the corolla are all nearly equally separated. 3. In the *Chamaecerasus* the lower segment of the corolla is twice as deeply separated as the others, and the berries are placed two together. 4. In the *Xylosteum* the segments of the corolla are nearly equally separated, and all deeply; the berries stand two together. 5. In the *Triosteospermum* the segments of the corolla are roundish, and the seeds three in a berry, which is coronated with a large cup: and, finally, in the *Symphoricarpos*, the corolla is almost campanulated, the fruit bilocular and semiquadrilocular, the seeds single.

As the rest of the generical characters are perfectly the same in all these, they are to be properly arranged together in the same genus, and these distinctions to be considered merely as specific.

1. *Lonicera floribus verticillatis, terminalibus, sessilibus,*
foliis summis connato-perfoliatis.

The verticillate, sessile, terminatory-flowered *Lonicera*, Derfoliate
honeysuckle.
with perfoliate leaves.

The root is woody, long, and creeping: the stalks are round, woody, and slender, not able to support themselves erect; they are four, or more, feet, in length, and have, at every joint, two leaves; these are roundish, and of a bluish-green; the lower ones stand separate, and on short pedicles; the upper ones grow together at their base, and the stalk pierces it's way through in the middle; the top pair on every branch form a kind of hollow, from the center of which grows a cluster of very beautiful red flowers, an inch and a half in length, without pedicles, and very sweet to the smell.

It is a native of Italy and the south of France, and is common with us in gardens. Tournefort calls it, *Caprifolium Italicum*; C. Bauhine, *Caprifolium perfoliatum*.

2. *Lonicera*

2. *Lonicera floribus verticillatis, foliis rotundioribus.* Ever-green
The rounder-leaved, verticillate-flowered *Lonicera*. Honeysuckle.

The root is long, creeping, and woody: the stalks are very slender and weak; they seldom grow to more than four or five feet high: the leaves stand in pairs; they are small, roundish, of a bluish-green colour, smooth and shining, on the upper surface, hoary underneath, often joined at the base. The flowers stand in tufts round the stalks; they are of a fine high crimson colour, but of no great smell. The shrub is an ever-green, and flowers the greatest part of the year.

It is a native of Virginia, but is not uncommon in our gardens. Tournefort calls it, *Periclymenum perfoliatum Virginianum, semper virens et florens*.

3. *Lonicera pedunculis bifloris, baccis distinctis, foliis integerrimis.* Dwarf
The two-flowered *Lonicera*, with distinct berries and undi- Cherry.
vided leaves.

The root is long, fibrous, and creeping: the stem is round and firm, standing erect, and growing to two or three feet high: the leaves stand in pairs; they are large, broad, and hairy, an inch and a half in length, and more than an inch in breadth. The flowers are small and yellowish, oblong, and divided at the extremity; they always grow two on a pedicle, which rises from the axil of a leaf. The berries grow like a pair of testicles on the stalk, and are red, when ripe, and of a very nauseous taste.

It is frequent in the woods and hedges, in Germany. Tournefort calls it, *Chamaecerasus dumetorum fructu gemino rubro*; Dodonæus, *Xylosteum*; and Linnaeus, *Lonicera foliis ovatis obtusis integris*.

4. *Lonicera corollae laciniis aequaliter profunde scissis.*
The *Lonicera*, with the segments of the flower equally deep cut in.

The root is long, woody, and creeping: the stalks are round, brittle, and covered with a greyish-brown bark, with a white pith within: they grow to three, four, or more feet high. The leaves stand in pairs; they are moderately large, obtuse, hairy, especially underneath, and not at all serrated at the edges. The flowers stand in clusters, at the tops of the branches, and are large, long, and of a pale red colour, and sweet smell. They stand two together, on long pedicles, arising from the axil of the leaves: these are succeeded by two berries, large, red, when ripe, and of an unpleasant taste.

This is frequent about the Pyrenean mountains, and in other places. Tournefort calls it, *Xylosteum*; J. Baohine, *Chamaecerasus Gesneri*, *Chamaepericlymenum Alpinum quorundam*.

The other species are, 1. The common Honeysuckle of our hedges. 2. The late, German, red *Lonicera*. 3. The early, Italian *Lonicera*. 4. The sinuated, hairy-leaved *Lonicera*. 5. The yellow-flowered, Italian *Lonicera*. 6. The black-fruited *Lonicera*. 7. The great-leaved, low *Lonicera*, called, *Triosteospermum*; and, 8. The *Symphoricarpos*, or campanulated-flowered *Lonicera*.

M U S S Æ N D A.

THE calyx is a small perianthium, situated on the germen, and divided into five segments at the edge: the corolla is composed of a single petal, and is of a funnel-like shape: the stamina are five slender, long filaments: the anthers are tumid: the germen is roundish; the style short: the stigmata are two. The fruit is an oblong berry, and the seeds in it are disposed in four series.

The characters are so peculiar, that they render a farther description unnecessary.

Class the Fifth. Order the First.

Division the Fourth.

Pentandria Monogynia, with the stamina declinated.

MIRABILIS.

THE calyx is a permanent perianthium, formed of five leaves, of an ovato-lanceolate figure, ventricose, and erect. The corolla consists of one petal, of an infundibuliform shape, and deciduous: the tube is slender, long, and thickest above: the nectarium is placed at it's base; the limb is erecto-patent, obtusely quinquefid, and plicated; the nectarium is globose and permanent. The stamina are five filiform filaments, arising from the receptacle, and affixed, not to the nectarium, but to the petal; they are of the length of the corolla, declinated, and unequal: the anthers are roundish, and assurgent: the germen is roundish, and placed within the nectarium: the style is filiform, of the length and situation of the stamina: the stigma is globose, punctated, and assurgent. The fruit is of an ovato-pentagonal figure, and the nectarium becomes indurated in a strange manner: the seed is single, globose, and covered.

This genus comprehends the Jalapa of Tournefort and others.

There is but one known species of it, but the vast variety of colour in the flower of this has led Tournefort and others to split that into ten or a dozen, and to describe the red-flowered, the white-flowered, the variegated-flowered, &c. as so many species.

MIRABILIS.

Barbel of Peru.

The root is very large, a foot, or more, in length, and often two inches in diameter, of a dusky colour on the surface, and paler within, and, when cut transversely, shews a number of circles: it is of an acrid and very disagreeable taste. The stalk is round and smooth, half an inch, or more, in diameter, of a firm texture, and pale green colour. It grows to three feet in height, and sends out a great number of branches. The leaves are placed two-at every joint; they stand on short pedicles, and are two inches, or more, in length, broadest at the base, and pointed at the extremity. The flowers rise singly from the ale of the leaves; they are large, and naturally of a beautiful red colour, but often white, yellowish, or of a dusky purple, or, finally, of two or more of these colours, mixed in various manners in the same flower. The plant is, from the month of July to the end of October, if the season be favourable, covered with a profusion of flowers, yet none of them remain longer than twenty-four hours on it, after they are open; the greater part not half so long, but the succession of flowers seems endless. The root is naturally perennial, but decays with us in the winter, if left in the ground; if taken up, and planted again in the spring, it lasts many years.

This beautiful plant is a native of South America. Tournefort calls it, *Jalapa flore rubro, flore flavo*, &c. C. Bauhine, *Solanum Mexicanum flore magno*; others, *Mirabilis Peruviana*.

The root of this plant has long been known to be purgative; Tournefort and Linnaeus declare that it is the jalap of the shops, but Houston, a man of great credit, brought over to us an evident convolvulus, declaring it to be the plant whose root was dug for jalap.

DATURA.

THE calyx is an oblong, tubulated, ventricose perianthium, of a pentangular figure, formed of a single leaf, divided into five segments at the extremity; it's upper part falls off so near the base, but an orbicular segment of it remains on the plant. The corolla is of the infundibuliform kind; it consists of a single petal; the tube is cylindric, and somewhat longer than the cup: the limb is erecto-patulous, of a pentangular figure, folded in five places, and almost entire at the edges, but rising into five points: the stamina are five subulated filaments, of the length of the cup: the

the antheræ are oblong, compressed, and obtuse: the germen is oval: the style is filiform and strait: the stigma is thick, obtuse, and hilamellated. The fruit is a suboval capsule, formed of four valves, containing two cells, and affixed to the base of the cup: the receptacles are convex, large, punctated, and affixed to a partition: the seeds are numerous, and kidney-shaped.

This genus comprehends the *Stramonium* and the *Stramonoides* of authors.

1. *Datura pericarpis spinosis, erectis ovatis.*

The *Datura*, with spinose, erect, oval fruits.

Thorn

Apple.

The root is composed of a number of long and moderately thick fibres: the stalk is round, succulent, green, and near an inch in diameter; it sends out a great number of branches, so that the plant, when full grown, is often two feet, or more, in diameter: it grows to three feet high. The leaves stand alternately on the stalks; they are very large, broad, serrated at the edges, and pointed at the extremity; they are of a dark green colour, smooth, and stand on pedicles of a moderate length. The flowers are very large, and always of a pure snow-white colour, an inch and a half over the mouth, when fully expanded; they stand singly, on strait pedicles, at the divarications of the branches. The fruit is erect, of an oval figure, bigger than a walnut, covered over with long spines, and of a green colour.

It is a native of South America, but is very common in our gardens, and thrives so well in our climate, that we frequently meet with it wild, where the seeds have chanced to be scattered by any accident. Tournefort calls it, *Stramonium fructu spinoso, oblongo, flore albo*; C. Bauhine, *Solanum fetidum pomo spinoso oblongo, flore albo*; Camerarius, *Tatula*.

2. *Datura pericarpis globosis spinosis nutantibus.*

The *Datura*, with round, prickly, bending fruits.

Netella

Nut.

The root is composed of a great number of long and thick, woody ramifications: the stalk is round and smooth, and grows to a foot and a half high: the leaves stand alternately on the stalks; they are very large, of a deep green colour, a little sinuated at the edges, hoary, and affixed to very long pedicles, and they have a very offensive smell. The flowers stand singly, at the ramifications of the branches; they are large, and sometimes of a pure white, sometimes reddish. The fruit is round, and of the size of a small apple; it is covered with roundish protuberances on the surface, and armed with short spines, and with somewhat of a hoariness about them: this fruit does not stand erect, as in the common *Datura*, but droops downward, and the remains of the calyx are not angulated in this, as in that species.

This is a native of Asia and Africa; we have it in our gardens. C. Bauhine calls it, *Solanum pomo spinoso rotundo, longo flore*; Tournefort makes two species of the varieties of it, which he calls, *Stramonium fructu spinoso rotundo, flore violaceo duplici triplicique*, and *Stramonium Ægyptiacum flore pleno intus albo, foris violaceo*.

The seeds of this species are what are known under the name of *Datura semina* in shops.

The other species of *Datura* are, 1. The tall, large-fruited *Datura*, with sinuated leaves, called *Stramonium ferox*. - 2. The little, American, *Alkekengi*-leaved *Datura*. 3. The smooth-fruited *Datura* of Malabar. 4. The great *Datura*, with small leaves.

HYOSCYAMUS.

THE calyx is a perianthium, of a cylindric figure, ventricose at the bottom, formed of a single leaf, divided into five acute segments at the extremity, and permanent. The corolla consists of a single, infundibuliform petal: the tube is cylindric and short; the limb is erecto-patent, lightly divided into five obtuse segments, one of which is broader than the rest. The stamina are five subulated and declinated filaments: the antheræ are roundish; the germen is roundish; the style is filiform, and of the length of the stamina, and the stigma capitated. The fruit is a capsule of an ovato-obtuse figure, with a line marked on each side; it contains two cells, and is covered with an operculum, which falls off horizontally: the seeds are numerous.

1. *Hyoscyamus foliis amplexicaulis.**The Hyoscyamus, with leaves surrounding the stalk.***Common
Henbane.**

The root is a foot long, half an inch in diameter, whitish, hard, woody, and of very little smell. The radical leaves are a foot long, and five inches broad, deeply sinuated at the edges, pointed at the extremity, sessile, of a bluish-green colour, somewhat hoary, and of an intolerably fetid smell. The stalk is round, hard, woody, half an inch in diameter, and grows to two feet high, or more; it divides toward the top into several branches: the leaves are large, and, like those at the root, they stand alternately: the flowers are half an inch in diameter, and more in length, of a dusky brownish colour, with a deep purple base, and a multitude of purple lines all over them. The cup is hairy, and the capsule large: the flowers are very numerous, and stand in long series, on the upper sides of the branches.

This is common with us in uncultivated Places. C. Bauhine calls it, *Hyoscyamus vulgaris niger*; Fuchsius, *Hyoscyamus flavus*.

2. *Hyoscyamus foliis ovatis integerrimis, calycibus inflatis subglobosis.**The oval-leaved Hyoscyamus, with inflated, subglobous cups.*

The root is long, thick, and woody: the stalk is round, and rises to two feet high: the leaves are smooth, of an oval figure, undivided at the edges, and affixed to pedicels. The top of the stalk is divided into many branches, on which stand the flowers; they are moderately large, and cut into five segments. When the fruit is ripe the calyx becomes very large and inflated, and perfectly represents that of the *Alkekengi*; but within it is a capsule, perfectly answering to the characters of the *Henbane*. It is a native of Siberia, and has not been described by any body except *Linnaeus*, who observes, that it connects in a manner the two genera of *Physalis* and *Hyoscyamus*, and is not without his doubts, but the plant itself may be a kind of mongrel between both; but this bears no great face of probability.

The other species of *Hyoscyamus* are, 1. The common, white *Henbane*. 2. The lanceolated *Hyoscyamus*, with prickly cups. 3. The great, yellow, *Cretic Hyoscyamus*. 4. The little, yellow *Hyoscyamus*. 5. The red Syrian *Hyoscyamus*. 6. The white, Egyptian *Hyoscyamus*. 7. The little, narrow-leaved, golden-flowered *Hyoscyamus*. 8. The Bete-leaved *Hyoscyamus*.

NICOTIANA.

THE calyx is a permanent perianthium, formed of a single leaf, divided into five segments, and of an oval figure. The corolla consists of a single petal, of an infundibuliform shape; the tube is longer than the cup; the limb is patulous, lightly divided into five segments, and folded in five places. The stamina are five subulated, inclined filaments, nearly of the length of the corolla; the anthers are oblong; the germen is oval, the style is filiform, and of the length of the corolla; the stigma is capitated and emarginated: the fruit is a capsule of a nearly oval figure; there is a line on each side of it, and it contains two cells, and opens at the top: the receptacles are of a half oval figure, punctated and affixed to the separating body: the seeds are numerous, kidney-shaped, and rugose.

1. *Nicotiana foliis lanceolatis.**Lanceolated-leaved Nicotiana.***Tobacco.**

The root consists of a cluster of long and thick white fibres, of a very acrid taste; the radical leaves are a foot long, or more, and five or six inches broad: the stalk is round, thick, and succulent; it grows to five or six feet high, and is hairy, and full of a white pith: the leaves stand alternately on the stalks; they are very large, often ten inches, or more, in length, hairy, without pedicels, and are thick, and terminate in a point. Their breadth is four inches, or more; they are of a yellowish-green colour, and glutinous to the touch; the top of the stalk is usually divided into three or four branches; the flowers are large, and very long, and of a beautiful pale red.

This

This is a native of many parts of America, and is cultivated in many others, for the advantage of the dried tobacco and stuff made from it. C. Bauhine calls it, *Nicotiana major latifolia*; others, *Tabaco latifolia*, and *Hyocyamus Peruvianus*; Renaldi *Bennochoes*.

2. *Nicotiana foliis ovatis.*

The oval-leaved Nicotiana.

English

Tobacco.

The root is oblong, and usually single, of the thickness of a man's finger, and six or eight inches long: the radical leaves are numerous; they are six inches long, about three and a half broad, and obtuse at the extremity: the stalk is round, thick, and hairy; it grows to two feet high, and toward the top divides into three or four branches: the leaves stand alternately, at considerable distances; they are four inches long, two and a half broad, of an oval figure, affixed to short pedicles, undivided at the edges, and obtuse at the ends; of a fattish appearance, and dusky green colour: the flowers stand several together; at the top of the branches they are affixed to short pedicles, and are of a yellowish-green colour, and much smaller than the flowers of the other.

This is a native of America; we call it English Tobacco, from it's being the first species known in our gardens. C. Bauhine calls it, *Nicotiana minor*; J. Bauhine, *Priapela*, quibusdam Renaldi *pachyphylla*.

The other species of *Nicotiana* are, 1. The great, narrow-leaved *Nicotiana*. 2. The dwarf *Nicotiana*. 3. The great, roundish-leaved *Nicotiana*. 4. The prickly, arborescent, white-flowered *Nicotians*.

A T R O P A.

THE calyx is a gibbous permanent perianthium, formed of a single leaf, divided into five segments, of an ovato-acute figure: the corolla consists of a single, infundibuliform petal: the tube is very short, the limb is ventricose, of an oval figure, and longer than the cup: the mouth is small, and divided into five equal and expanded segments: the stamina are five subulated filaments, proceeding from the base of the petal; they are of the length of the corolla, connivent at the base, and bent outwardly upwards; the anthers are thick and asurgent. The germen is semi-oval; the style is filiform, of the length of the stamina, and inclined: the stigma is capitated, asurgent, and transversely oblong. The fruit is a globose berry, placed on a large cup, and containing two cells: the receptacle is convex on each side, and kidney-shaped. The seeds are numerous, and kidney-shaped also.

This genus comprehends the *Belladonna* of Tournefort.

There is only one known species of it.

A T R O P A.

The root is composed of a number of oblong, tuberous bodies, of a brown colour, succulent, and of a very disagreeable smell. The radical leaves are a foot long, and five inches broad: the stalk rises to three or four feet high, and is very much divaricated and branched: the leaves stand alternately on it, and at small distances; they are five or six inches long, and more than half as much in breadth, of a dusky green above, and a paler green underneath, hairy on both sides, and not finuated at the edges: the flowers are very numerous; they stand in the axils of the leaves, and are large, of a campanulated figure, and striated. They are of a dusky purple colour within, with a yellow, variegated base; the outer surface is of a greenish red, and hairy: after the flower is fallen, a fine beautiful and large berry, black, when ripe, appears in the place.

It is a native of England, but happily is not frequent. Clusius calls it, *Solanum lethale*; C. Bauhine, *Solanum melanoceras*; Tournefort, *Belladonna majoribus foliis et floribus*. It is a powerful poison.

M A N D R A.

MANDRAGORA.

THE calyx is a large, erect, campanulated perianthium, of a quinquangular figure, formed of one leaf, divided into five semi-lanceolated segments, venous and permanent. The corolla consists of a single petal, erect, and growing gradually wider from the base, hollow, a little larger than the cup, and divided, beyond the middle, into five lanceolated segments: the stamina are five subulated filaments, of the length of the cup, and hairy at the base: the germen is roundish; the style subulated, of the length of the stamina, and somewhat declinated: the stigma is capitated: the fruit is a great globose berry, containing two cells: the receptacle is fleshy and convex on both sides; the seeds are numerous, and kidney-shaped.

Of this genus there is only one known species, though usually, from a slight variation in the shape of the fruit, this is divided into two, a male and female.

MANDRAGORA.

Mandrake.

The root is very large, two inches thick, and a foot, or more, in length; often single, but sometimes divided from about the middle into two parts, which the common people suppose like the thighs and legs of a man, and the upper part like the body; sometimes there are, however, three or four of these branches instead of two: the colour of the outer surface is a pale brown, and it is white within: the leaves are a foot, or more, in length, five inches in breadth, broadest in the middle, and have no pedicles: they are of a dusky green colour, and disagreeable smell: the flowers stand on short pedicles four inches long, slender, and rising immediately from the root; one flower stands on each. It is large, of a dusky greenish colour, with some admixture of red, and somewhat hairy: the fruit, which succeeds this, is round, and of the size of a small apple, green at first, but yellow and soft, when ripe. Sometimes it is not perfectly round, but of a turbinate or pear-like form, in which case the plant is called the female Mandrake, as in the other, or more common state, it is called the male. The whole plant has a very bad smell.

It is a native of Spain and Italy, and is frequent in gardens with us. C. Bauhine calls it, *Mandragora mas fructu rotundo*, and *Mandragora flore purpurascente*. It has been esteemed a poison by many, and by others it is declared innocent. The bark of the root was once in use as a narcotic; at present the leaves are used in ointments.

VERBASCUM.

THE calyx is a small permanent perianthium, formed of one leaf, divided into five erect, acute segments at the rim: the corolla consists of a single petal, of a rotated figure; the tube is cylindric, and very short; the limb is patent, and divided into five oval, obtuse segments: the stamina are five subulated filaments, shorter than the flower: the anthers are roundish, compressed, and erect; the germen is roundish; the style is filiform, of the length of the stamina, and inclined; the stigma is thick and obtuse: the fruit is a roundish capsule, divided into two cells: the receptacles are of a semi-oval figure, and affixed to the partition: the seeds are numerous and angular. In most species, the stamina are inclined, unequal, and covered with coloured villi at the base.

This genus comprehends the *Verbascum* and *Blattaria* of authors.

1. *Verbascum foliis utrinque tomentosis, caule floribus sessilibus clavato.*

The *Verbascum*, with leaves woolly on each side, and with sessile flowers.

White
Gullern.

The root is oblong, single, woody, moderately thick, and covered with fibres; the radical leaves are fourteen inches long, and six in breadth; they are woolly, and pointed at the extremity: the stalk is thick, firm, and rigid, and grows to six or eight feet high: the leaves stand very close, in an irregular manner on it; they have no pedicles, but have membranaceous appendages often running a great way from their bases, and giving

giving the stalk an alated figure. They are four or five inches long, and two or three broad, very white and woolly, and pointed at the extremity: the stalk terminates in a kind of spike of a foot and half, or more, in length, composed of multitudes of flowers, very thick set together, and opening successively and irregularly: they are moderately large, of a beautiful yellow, and the anthers in them of a bright purple.

The plant is common with us in dry places. C. Bauhine calls it, *Verbascum mas latifolium luteum*; others, *Tapfus barbatus*.

2. *Verbascum foliis ovatis crenatis subtus tomentosis, caule angulato.*

Black Gull-
lein.

The oval, crenated-leaved *Verbascum*, with angular stalks.

The root is oblong, single, and furnished with a number of small and slender fibres. The radical leaves are ten inches long, and four, or more, broad, crenated round the edges, and pointed at the ends. The stalk is angular, and grows to five or six feet in height: the leaves stand irregularly on it, but at some distance from one another; they have pedicles of two inches long, and usually of a reddish colour, and are of an oval form, four or five inches long, crenated round the edges, of a dusky green at top, and hoary or woolly underneath. The top of the stalk furnishes a long spike of flowers, thick set together, and opening irregularly; they are large, of a beautiful bright yellow, with purple anthers.

It is common by road-sides, in many parts of England. C. Bauhine calls it, *Verbascum nigrum flore ex luteo purpurascens*; Dodonæus, *Verbascum nigrum*; Lobel, *Verbascum falvæ folio*.

3. *Verbascum foliis amplexicaulibus oblongis glabris, pedunculis solitariis.*

Yellow Gull-
lein.

The oblong, smooth-leaved *Verbascum*, with single peduncles.

The root is oblong, thick, and furnished with a multitude of fibres. The radical leaves are three inches long, an inch broad, crenated at the edges, and of a dark green colour: the stalk is round; it rises to two or three feet high; the leaves stand irregularly, and pretty close on it: they surround the stalk at the base, and are two or three inches long, an inch broad, jagged at their edges, and of a dusky green colour, smooth and shining; the top of the stalk furnishes a long spike of flowers, but they are not placed so close as in the former species, but each stands out on its own separate pedicle. They are very large, and of an extremely beautiful yellow colour: the stamina in the midst are of a deep strong purple, and add greatly to the beauty of the flower.

It is a native of England, but is not common with us. C. Bauhine calls it, *Blattaria lutea folio oblongo laciniato*; J. Bauhine, *Blattaria lutea*. The flowers are often white.

The other species of *Verbascum* are, 1. The great, sweet-scented, white *Verbascum*. 2. The thick-leaved, branched, gold yellow-flowered *Verbascum*. 3. The undulated-leaved *Verbascum*. 4. The dolly *Verbascum*, with a small, yellow flower. 5. The tall, white-flowered *Verbascum*. 6. The branched, small-flowered, smooth-leaved *Verbascum*. 7. The borrag-leaved *Verbascum*. 8. The purple-flowered *Verbascum*. 9. The tall, jagged-leaved *Verbascum*, with great, yellow flowers. 10. The multifold-leaved, hoary *Verbascum*. 11. The conjugate-leaved, Cretic *Verbascum*. 12. The shrubby, spicose *Verbascum*. 13. The white, sinuated-leaved *Verbascum*. 14. The Cooyza-leaved *Verbascum*, with ferrugineous, yellow flowers. 15. The betony-leaved *Verbascum*. 16. The long, narrow-leaved *Verbascum*. 17. The roundish, white-leaved *Verbascum*.

CORIS.

THE calyx is a permanent, campanulated perianthium, formed of one leaf, divided into ten segments at the edge, the alternate ones reflex. The corolla consists of a single petal, and is of the ringent kind: the tube is cylindric, and of the length of the cup; the limb is plane, and divided into five oblong, obtuse, emarginated segments; the two upper ones short, and more distant from one another: the stamina are five setaceous filaments, of the length of the corolla, and declinated; the antheræ are simple; the germen is roundish; the style is filiform, of the length of the stamina, and declinated: the stigma is thick; the fruit is a globose capsule, formed of five valves, and situated in the bottom of the cup: the seeds are small, numerous, and oral.

Of this genus there is only one known species.

CORIS.

The root is oblong, thick, and reddish on the outside: the stalks are round, smooth, and firm, usually of a purplish colour, and grow to three or four inches high; they are very much branched. The leaves are like those of the larger erica, but somewhat small, oblong, and set extremely thick, and close together: the flowers stand in clusters, at the extremities of the branches, forming a kind of short spikes or heads: they are small, but of an extremely beautiful purple, or bluish, colour.

It is a native of France and Italy; we have it in some of our gardens. C. Bauhine calls it, *Coris cerulea maritima*; Lobel, *Coris Monspeliaca*.

Class the Fifth. Order the First.

Division the Fifth.

Pentandria Monogynia, with monopetalous flowers and berries placed upon the receptacle.

RHAMNUS.

TH E R E is no calyx. The corolla has been, indeed, by some taken for a calyx; but the situation of the stamina proves, that it is not so; the corolla consists of a single, unperforated petal: the tube is of a turbinated, cylindric figure: the limb patent, divided, and acute; the whole petal is extremely rude, but internally coloured, and of an infundibuliform shape, and at the base of every segment it has a little squamula, which is connivent inwardly. The stamina are subulated, and are in number equal to the segments of the corolla, and are inserted into the corolla under these squammulae; the antheræ are small: the germen is roundish; the style is filiform, and of the length of the stamina; the stigma is obtuse, and divided into segments, fewer in number than the stamina: the fruit is a round, naked berry, divided within into fewer cells than there are segments of the corolla: the seeds are single, roundish, gibbous, and compressed on one side.

This genus comprehends the *Rhamnus*, *Frangula*, *Cervispina*, *Paliurus*, *Alaternus*, and *Zizyphus* of authors. The structure of the flower is evidently the same in all these. The other differences are to be looked on only as specific. In the *Frangula*, the stigma is emarginated; the fruit contains two seeds, and the corolla has five segments. In the *Cervispina*, the stigma is quadricid; the fruit contains four seeds, and the corolla has four segments; in this genus the male and female flowers are on different individuals of the same species. In the *Paliurus* there are three styles; the nucleus has three cells, the corolla has five segments, and the berry is surrounded by a membranaceous rim. In the *Alaternus*, the stigma is trid; the fruit has three seeds, the corolla five segments. In this the squammulae of the corolla are wanting, and there are male and hermaphrodite flowers on separate plants. In the *Zizyphus*, there are two styles, and the nucleus contains two cells; the corolla has five segments.

1. *Rhamnus*

1. *Rhamnus ramis spina terminatis, floribus quadrifidis diæcis.*
The Rhamnus, with terminatory spikes, and quadrifid, diæci-
ous flowers.

Buck-
thorn.

The root is woody, large, and spreading; the shrub grows to ten or fifteen feet high: the trunk is covered with a blackish, external bark, under which there are a yellow and a green one: the wood is hard and whitish. It is very ramose, and every branch is full of lesser shoots, beset with leaves, and terminated each by a very robust and sharp thorn. The leaves are an inch and half long, and more than an inch broad, serrated at the edges, and terminating in a point: the flowers are very small and green: the berries of the size of a pea, round, black, and containing four seeds; they stand on long pedicles, about the bases of the spines. The several shrubs of this species are some of them only productive of male flowers, succeeded by no fruit; others produce hermaphrodite flowers, succeeded by berries.

It is common in our hedges. C. Bauhine calls it, *Rhamnus catharticus*; others, *Spina cervina*, and *Cervispia*. The juice of it's berries makes the *Syrupus de spina cervina*, or *Syrup of Buckthorn* of the Shops, in such common use at a purge.

2. *Rhamnus inermis floribus monogynis hermaphroditis*
The Rhamnus without prickles, with hermaphrodite flowers,
and with single styles.

Black
Alder.

The root is woody, creeping, and full of fibres. The shrub rises to about six or eight feet high; the stem is seldom more than half an inch in diameter, and divides into a number of branches, so that the shrub is not of the robust kind: the bark of the trunk is smooth and brown, usually spotted with bluish; the under bark yellow, and stains any thing it touches; the wood is very brittle and whitish, with a pith within: the leaves stand irregularly on the branches; they are large, roundish, and terminate in a point; they are near two inches long, and little less in breadth, of a dark green colour, and shining surface. The flowers are small, and of a whitish green colour; they grow in clusters from the axis of the leaves, each on it's separate pedicle: the berries are round, green at first, afterwards red, and finally black, and contain two seeds.

It is common in some of our woods. Tournefort calls it, *Frangula*; C. Bauhine, *Alnus nigra baccifera*.

3. *Rhamnus aculeis geminis, altero inferiore reflexo, floribus*
trigynis.
The Rhamnus, with two thorns at a place, the lower one
crooked, and with three styles.

Christ's
Thorn.

The root is woody and spreading; the shrub is usually about six or eight feet high, but it sometimes grows to the stature of a tree: the trunk is thick; the branches numerous, reddish, weak, and bent downwards: the spines are frequent, short, and sharp; the leaves are small, of an oval figure, lightly crenated about the edges, and of a pale green: the flowers stand in the axils of the leaves, and are small and yellowish; the fruit is edged on each side with a membrane.

It is a native of France, and other parts of Europe. Dodonæus calls it, *Paliurus*; Camerarius, *Rhamnus*; C. Bauhine, *Rhamnus folio subrotundo fructu compresso*; others, *Rhamnus tertius Dioscoridis*.

4. *Rhamnus inermis floribus diæcis, stigmate triplici.*
The Rhamnus without prickles, with diæcious flowers,
and a triple stigma.

Alaternus.

The root is woody and creeping; the shrub rises to six or eight feet high, sometimes much more; the trunk is covered with a greyish bark, under which is a yellow one: the branches are numerous; the leaves are of an oval figure, an inch long, and

of a glossy surface, thick, firm, and placed near one another; they are lightly dentated at the edges. The flowers are small, and of a greenish colour; they hang in clusters from the axæ of the leaves, and each has it's separate pedicle. The fruit is a round berry, red, when ripe. In this species some shrubs bear only male flowers, others hermaphrodite ones and berries.

It is a native of France, Italy, and Germany; we have it frequently in our gardens. Clofius calls it *Alaternus*; C. Bauhine, *Philyrea elatior et humilior*.

5. *Rhamnus floribus digynis, foliis ovatis.* The Ju-
The oval-leaved *Rhamnus*, with digynous flowers. jube Tree.

The root is woody and large. The shrub grows often to twelve feet high, sometimes it has the appearance of a regular and moderately large tree. It's trunk is covered with a brownish bark; it's wood is white and firm; the branches are numerous, and beset with thorns. The leaves stand alternately, and are of an oval figure, an inch and a half long, and an inch broad, obtuse, serrated at the edges, and of a pale green. The flowers stand in clusters, at the axæ of the leaves; they are small and greenish. The fruit is of the bigness of a small olive, and reddish, when ripe.

It is a native of Spaiò and Italy; we have it sometimes in gardens. Authors call it, *Zizyphus* and *Jujuba*. The fruit was at one time used in medicine as a pectoral, and sometimes in fevers; at present it is not regarded.

CHRYSOPHYLLUM.

THE calyx is a small, permanent perianthium, formed of five roundish leaves: the corolla is formed of a single, campanulated petal: the limb is divided into ten segments, which are alternately roundish and patulous, and narrow and erect; the stamina are five subulated filaments: the antheræ are simple: the germen is roundish: the style is subulated: the stigma is simple. The fruit is a large berry, of an oval figure, and containing one cell: the seeds are osseous, and three in number.

This genus comprehends the *Cainito* of Plumier, and is of kin to the *rhamnus* and *sideroxylum*; the characters express the essential difference from them, and render a description unnecessary.

SIDEROXYLUM.

THE calyx is a small, erect perianthium, composed of a single leaf, divided into five segments, and permanent. The corolla consists of a single petal, divided into five roundish, erect, concave segments, and, at the base of every one of these, there is placed a cuspidated, serrated denticle, bending inwards. The stamina are five subulated filaments, of the length of the corolla: the antheræ are simple: the germen is roundish: the style is subulated, and of the length of the stamina: the stigma is simple. The fruit is a roundish berry, containing only one cell: the seeds are four in number.

LYCIUM.

THE calyx is a small, erect, obtuse, permanent perianthium, divided into five segments: the corolla consists of a single, infundibuliform petal: the tube is cylindric, patent, and crooked: the limb is small, divided into five segments, obtuse and patulous: the stamina are five subulated filaments, growing out of the tube of the corolla; they are shorter than it, and inclined: the antheræ are erect: the germen is roundish: the style is simple, and longer than the stamina: the stigma is bifid and thick. The fruit is a roundish berry, containing two cells: the seeds are numerous, and kidney-shaped: the receptacles are convex, and affixed to the dissepimentum.

This genus comprehends the *Lycium* and *Jasminoides*.

1. *Lycium*

1. *Lycium foliis ovatis dentatis.* Abignon
The Lycium, with oval, dentated leaves. Thorn.

The root is formed of a number of woody ramifications. The shrub rises to six, or more, feet in height, and is very much branched, and armed with long and robust thorns. The leaves stand irregularly on the branches; they are about an inch long, near as much in breadth, and dentated at the edges. The flowers stand in clusters, about the base of the spines; they are small, and of a pale yellowish-green colour: the pedicles they stand on are short: the berries are small and roundish.

It is a native of France, Germany, and some other parts of Europe. C. Bauhine calls it, *Lycium Gallicum*; Lobel, *Paliurus alia peregrina*.

2. *Lycium foliis linearibus.* Purple Jas-
The narrow-leaved Lycium. minoides.

The root is large and spreading. The shrub grows to eight or ten feet high. The trunk is large; the branches numerous and tortuous; they send off many short shoots, each of which, like the main branch, is terminated by a robust spine. The leaves are an inch long, very narrow, obtuse at the end, and even at the edges. The flowers stand singly, on moderately long pedicles; they are long, large, and of a beautiful purple colour. The fruit is of the size of a large nut.

It is a native of Africa; we have it in some gardens. C. Bauhine calls it, *Rhamnus alter foliis falsis, flore purpureo*; Nissole and Micheli, *Jasminoides Africanum jasmini aculeati foliis et facie*.

The other species of *Lycium* are, 1. The long-leaved *Lycium*. 2. The box-leaved *Lycium*. 3. The olive-leaved *Lycium*. 4. The capillaceous-leaved *Lycium*. 5. The broader-leaved, *Jasminoides Lycium*. 6. The willow-leaved *Lycium*, called prickly *Jasmine*.

C E S T R U M.

THE calyx is a small, cylindric, obtuse perianthium, formed of a single leaf, divided into five segments at the rim, erect, and obscure. The corolla consists of a single, infundibuliform petal: the tube is cylindric, very long and slender; the opening is roundish: the limb plane, plicated, and formed into five equal, oval segments. The stamina are five filiform filaments, adhering longitudinally to the tube, though sending out in the middle a little denticle, which stands inward. The anthers are roundish, but somewhat tetragonal, and stand within the opening of the petal. The germen is of a cylindric, but somewhat oval, figure, of the length of the cup. The style is filiform, and of the length of the stamina; the stigma is thick, obtuse, and slightly emarginated. The fruit is an oval, oblong berry, containing only one cell: the seeds are numerous and roundish.

This genus comprehends the *Hidinnia* of Fevill. The characters distinguish it sufficiently.

P H I L Y E A.

THE calyx is double; there is a common receptacle of the flowers, which collects them all into a head, or disk, and, beside this, each has it's proper perianthium, which is formed of three narrow, oblong leaves, and is permanent. The corolla consists of a single, imperforated petal, externally rude and erect: the tube is conic, and of the length of the perianthium: the limb is divided into five small, erect segments, and, at the base of each of these, there is a little, acuminate squamula, turning inwards. The stamina are five very small filaments, inserted into the corolla under these squamulae. The anthers are simple: the germen is situate in the bottom of the flower: the style is simple: the stigma is obtuse: the fruit is a roundish, trilobous capsule, formed of three valves, and divided into three cells: the seeds are single, roundish, gibbous on one side, and acuminate.

This genus comprehends the *Alaternoides* of authors. The characters distinguish it sufficiently.

CHIRONIA.

THE calyx is an erect, permanent perianthium, divided at the edge into five lanceolated segments. The corolla is formed of a single petal, and is equal: the tube is roundish, and of the size of the cup: the limb is divided into five equal, oval, segments, and patent: the stamina are five broad and short filaments, produced from the mouth of the tube: the anthers are large, oblong, erect, and connivent: the germen is oval: the style is filiform, a little longer than the stamina, and declinated: the stigma is capitated and affurgent. The fruit is of an oval figure, and contains two cells: the seeds are numerous and small. The characters distinguish it sufficiently.

BRUNFELSIA.

THE calyx is a very small, campanulated, obtuse perianthium, formed of one leaf, divided into five segments at the edge, and permanent. The corolla consists of a single, infundibuliform petal: the tube is very long; the limb plane, divided into five segments, and obtuse: the stamina are five, of the length of the tube, and inserted into it: the anthers are oblong: the germen is roundish and small: the style is capillary, and of the length of the tube: the stigma is thick. The fruit is a globose berry, containing only one cell: the seeds are numerous, roundish, and placed close to the integument of the berry.

It is an American, described by Plumier.

MYRSINE.

THE calyx is a small, permanent perianthium, formed of one leaf, divided into five, sometimes four, oval segments. The corolla is formed of a single petal, divided into five semioval, obtuse, connivent segments: the stamina are five filaments, scarce discernible, inserted into the middle of the corolla: the anthers are subulated, erect, and shorter than the corolla: the germen is of a globose figure, and almost fills up the corolla: the style is cylindric, longer than the corolla, and permanent: the stigma is large, woolly, and hangs out of the corolla. The fruit is a roundish, depressed berry, containing five cells, and in each a single seed: sometimes the segments of the cup are but four, then the stamina, &c. are four also.

STRYCHNUS.

THE calyx is a small, deciduous perianthium, formed of one leaf, divided into five segments. The corolla is formed of a single petal: the tube is cylindric: the limb is patent, divided into five segments, and acute: the stamina are five filaments, of the length of the corolla: the anthers are simple: the germen is roundish: the style is simple, and longer than the stamina: the stigma is thick. The fruit is a very large, smooth, fragile berry, of a globose figure, containing only one cell, and full of a pulpy matter: the seeds are orbiculate, depressed, bairy, the hairs radiated from the edges.

CAPSICUM.

THE calyx is an erect, permanent perianthium, formed of one leaf, divided into five segments at the edge. The corolla is a rotated petal: the tube is very short: the limb is large, patent, and plicated, lightly divided into five broad, acute segments: the stamina are five very small, subulated filaments: the anthers are oblong and connivent: the germen is oval: the style is filiform, and longer than the stamina: the stigma is obtuse. The fruit is a berry, without any pulp, of a figure approaching to oval, hollow, coloured, formed into two cells: the receptacles are dry, and grow to the dissipation: the seeds are numerous, kidney-shaped, and compressed.

Of this genus there is but one known species. Tournefort gives an account, indeed, of no less than twenty-six different ones; and most other authors name ten or a dozen; but, strictly examined, they will be found to be all one and the same plant, varying, as it does almost infinitely, in the length and figure of its fruit.

CAPSICUM.

CAPSICUM.

Guinea Pepper.

The root is oblong, slender, and furnished with a number of fibres. The stalk is angulated, hairy, firm, and solid, of a strong green colour, except at the origin of the leaves, where it is usually reddish; it is much branched, and with us grows to a foot and a half, or two feet, in height; in hotter countries to four feet. The leaves stand singly; they are oblong, broadest in the middle, and pointed at the extremity, three inches long, and an inch and a quarter broad, smooth, thick, and of a yellowish-green colour. The flowers arise from the axils of the leaves, and from the divarications of the branches; they are moderately large and white, and stand on long pedicels; in their place comes the fruit, the character of which is, that it is a berry without juice; it's shape and size vary extremely; it's colour is usually a fine bright red, but this not always; in shape it is sometimes long, and sometimes short and roundish, sometimes oval, sometimes cylindric, and sometimes broad and flattened; sometimes cordated, sometimes sharp-pointed, sometimes obtuse: it is sometimes no larger than a cherry, sometimes as big as a pear, sometimes five inches long: it is upon these variations that Tournefort and others have formed their distinctions of imaginary species; the whole habit of the plant is otherwise the same in all, and, as to these differences, a skilful gardener can multiply them to infinity. Tournefort calls it Capsicum; C. Bauhine, Piper Indicum.

It is a native of Brasil, Mexico, and many other parts of America, and even of some of the northern parts of that quarter, as also of the East Indies. The whole plant is of a burning, acrid taste. The people of the American plantations use the fruit in sauces, under the name of Cayen Pepper, or, as some of them speak it, Cayen Butter.

SOLANUM.

THE calyx is a permanent perianthium, formed of one leaf, divided into five segments at the edge, erect and acute: the corolla consists of a single, rotated petal: the tube is very short; the limb large, plicated, divided into five segments, and reflexo-plane: the stamina are five very small, tubulated filaments: the anthers are oblong, connivent, and contingent: the germen is roundish; the style is filiform, and longer than the stamina: the stigma is obtuse. The fruit is a round, smooth berry, punctated at the top, and formed into two cells: the receptacle is fleshy, and convex on both sides: the seeds are numerous and roundish.

This genus comprehends the Solanum, Melongena, and Lycopersicon of authors.

1. *Solanum caule inermi herbaceo, foliis ovatis angulatis.*

The herbaceous Solanum, without prickles, with oval, angular leaves.

Common
Nightshade.

The root is oblong, slender, and surrounded with a multitude of fibres. The stalk is roundish, thick, tortuous, and branched. It grows to a foot and a half high, and is of a dark green colour. The leaves stand single, and on long pedicels; they are of a roundish, oval figure, largest at the base, sinuated round the edges, and they terminate in a point. The flowers stand on long pedicels, affixed several together to one common peduncle, arising from the axil of a leaf; they are small and white; the berry that succeeds each is as big as a pea, black and glossy.

It is very common in our fields and gardens. C. Bauhine calls it, Solanum officinarum; Tournefort, Solanum acinis nigricantibus.

2. *Solanum caule inermi perenni flexuoso, foliis superioribus hastatis.*

The perennial, flexuous-stalked Solanum, with the upper leaves hastated.

Woody
Nightshade.

The root is composed of a multitude of fibres; the stalks are round, woody, but very slender, weak, and flexuous; they support themselves usually among bushes, and will

will grow to six or eight feet in length. The bark of the main stalk is of a greyish-brown, that of the young shoots green. The leaves stand singly on large pedicles; they are of a kind of oval figure, but too much pointed at the end, and have two long auriculae at the base. The flowers grow in clusters; they are small, and of an ill smell, but of a very beautiful purple colour; the berries, which succeed them, are oblong and red.

It is frequent with us in watery places, and among hedges. C. Bauhine calls it, *Solanum scandens* five *Dulcamara*.

3. *Solanum caule inermi herbaceo, foliis pinnatis incisis.*
The herbaceous Solanum, without prickles, with pinnated, serrated leaves.

**Lobe
 Apple.**

The root is composed of a multitude of white fibres: the stalk is roundish, hollow, hairy, weak, and procumbent in great part: it grows to three or four feet long, and usually keeps the upper half erect, the rest on the ground; it is very ramose, and the branches long. The leaves are pinnated; each consists of three or four pair of pinnae, which are of an oval figure, serrated round the edges, and an inch long, affixed to a middle rib, terminated with an odd leaf at the end: they are somewhat hairy, and of a deep dusky green colour. The flowers do not grow from the axils of the leaves, but from the intermediate space; they stand ten or twelve together, each on a pedicle of an inch long; they are moderately large, and yellow. The fruit is very large and beautiful, of a yellowish-red colour.

It is a native of both the East Indies and America, and is very common in our gardens. The fruit is eaten by many people, but it ought to be thoroughly ripe. C. Bauhine calls it, *Solanum pomiferum fructu rotundo striato molli*; Tournefort, *Lycopersicon Galeni*.

4. *Solanum calycibus aculeatis, foliis ovatis integerrimis tomentosis.*

The prickly-cupped Solanum, with oval, woolly leaves.

**Bad
 Apple.**

The root is composed of a multitude of fibres, and does not descend very deep into the ground: the stalk is usually single, round, reddish, and covered with a soft down, which is easily rubbed off; it is of the thickness of a finger, not more than eight or ten inches high, but branched from the very bottom to the top. The leaves are very large, often four inches and a half long, and more than three broad; they are deeply sinuated about the edges, and they stand on very long and thick pedicles; the colour of the leaf is a dark green; but the whole stalk of the plant, the pedicles of the leaves, and even the middle rib, is usually of a blood red; there is always a loose down upon the leaves, and the middle rib is sometimes armed with thorns. The flowers grow opposite to the leaves, usually single, sometimes two or three together; the cup is armed with red spines: the flower itself is large, naturally of a purple colour, sometimes whitish. The fruit is roundish, oval, or of an oblong figure, approaching to that of a cucumber, of a fine purple, or greenish, colour.

It is a native of Africa, and of some parts of America, but we have it in our gardens. Tournefort calls it, *Melongena fructu rotundo*; C. Bauhine, *Solanum pomiferum fructu oblongo*; Dodonæus and others, *Mala insana*; but, notwithstanding that terrible name, the Italians eat the fruit, as they do that of the former species, without any injury.

The other species of *Solanum* are very numerous in nature, but not nearly so many as they appear in the writings of the botanical authors, who have frequently made six or eight species out of one: an instance of this we have in the first species of *Solanum* described here, the most common of all the kinds, both here and in many other places, and almost universal throughout the world, but with some variation, as, 1. In the East Indies; it's leaves are even at the edges, and smooth, and the stalks round. 2. In Guinea the stalks are angular, and the leaves smooth. 3. In Virginia the stalks are angular and dentated, the leaves smooth, and bent back. 4. In our own country the stalks are round and hairy, and the leaves sinuated, and very little hairy. 5. In Judea the stalk is somewhat prickly, and the berries sometimes yellow. These are but very trifling variations, when we consider the plant in so many different climates; yet every one of these varieties has been described, by one author or other, under the name of a distinct

distinct species, and thus six species made out of what is truly but one. Dillenius has called the Indian kind, *Solanum procerius patulum vulgare fructu*; Boerhaave calls the Guinea kind, *Solanum fructu nigro umbellato*; and so of the rest. This may explain the reason why, in many genera, the species mentioned here are much fewer than stand usually in authors.

The more singular and distinct kinds, beside the above described, are, 1. The common Potato. 2. The borage-leaved, prickly *Solanum*. 3. The cordated-leaved, prickly *Solanum*. 4. The shrubby, narrow-leaved *Solanum*. 5. The prickly, procumbent *Solanum*. 6. The yellow-spined, American *Solanum*. 7. The great, woolly, prickly *Solanum*. 8. The sinuated-leaved *Solanum*, with purple spines. 9. The pomiferous, soft, woolly *Solanum*, with no spines. 10. The long-fruited, sinuato-leaved *Solanum*. 11. The bay-leaved, prickly *Solanum*. 12. The mullein-leaved *Solanum*. 13. The almond-leaved *Solanum*. 14. The henbane-leaved, climbing, prickly *Solanum*. 15. The blite-leaved, shrubby *Solanum*. 16. The angulated-leaved, great-fruited, shrubby *Solanum*. 17. The prickly, long-fruited *Solanum*.

PHYSALIS.

THE calyx is a small, pentagonal, ventricose perianthium, formed of a single leaf, divided into five short acuminate segments at the edge, and permanent. The corolla consists of a single, rotated petal: the tube is very short; the limb is large, plicated, divided into five short, acute segments: the stamina are five very small, subulated filaments: the anthers are erect and connivent: the germen is roundish: the style is filiform, somewhat longer than the stamina: the stigma is obtuse. The fruit is a small berry, roundish, and containing two cells; it is situated in the bottom of a large, hollow, coloured, and inflated case, which is formed of the perianthium, extended to those dimensions, and closed at the extremity: the receptacle is kidney-shaped, and duplicate: the seeds are numerous, kidney-shaped, and compressed.

1. *Physalis caule simpliciter annuo, foliis integerrimis geminatis, floribus solitariis.*

The single, annual-stalked *Physalis*, with geminated leaves, and single flowers. Winter Cherry.

The root is long and slender; it creeps under the surface, and sends out a number of fibres. The stalk is round, slender, somewhat hairy, often red, and always jointed at small distances; at every joint there stand two leaves; each has it's own long pedicel; they are of an oval figure, obtuse at the end, and of a yellowish-green colour, not serrated at the edges, a little hairy, scarce perceptibly so, and of a pale yellowish-green colour. The flowers stand on slender, hairy pedicels, of three quarters of an inch long, growing from the axils of the leaves; they are large and white; when they are fallen, the cup swells to the bigness of a walnut, and becomes red, pentagonal, and hollow, like a bladder; the berry is placed at it's bottom, and is red, and of the bigness of a small cherry.

It is a native of Germany, Italy, and France; we have it in gardens. Tournefort calls it, *Alkekengi officinarum*; C. Bauhine, *Solanum vesicarium*.

2. *Physalis annua ramosissima, ramis teretibus pubescentibus, gemiculis nodosis.*

The branched *Physalis*, with round, hoary stalks, and knotty joints. Virginian Winter Cherry.

The root is fibrous: the stalk is round, hairy, jointed, and protuberant at the joints, a foot and a half long, but in great part procumbent. The leaves are oval, hoary, and oblong; the flowers are smaller than in the former, and the fruit is yellow.

It is a native of Virginia. Morison calls it, *Solanum vesicarium procumbens Virginianum folio lanuginoso*.

The other species are, 1. The Indian, beet-leaved *Physalis*. 2. The small-fruited *Physalis*. 3. The little, green-fruited *Physalis*. 4. The large, American *Physalis*, with deeply sinuated leaves, brought over by Houlton.

Class the Fifth Order the First.

Division the Sixth.

Pentandria Monogynia, with flowers composed of several petals.

GRONOVIA.

THE calyx is a perianthium, divided beyond the middle into five segments, which are erect, and of a semi-lanceolated figure; the whole is campanulated, coloured, and permanent. The corolla consists of five extremely small petals, of a roundish figure, and growing out of the incisures of the cup: the stamina are five capillary filaments, of the length of the corolla; they are inserted into the calyx, and stand alternately with the petals: the antheræ are erect and didymous: the germen is placed below the receptacle: the style is filiform, and longer than the stamina: the stigma is obtuse. The fruit is a roundish tapfule, coloured, and containing only one cell: the seed is single, roundish, and large.

It is an American, but it stands in some of our gardens. The characters render a description unnecessary.

HEDERA.

THE involucre of the pedicles is very small, and divided into many segments: the perianthium of the flower is small, placed on the germen, and divided into five segments: the corolla consists of five oblong, patent petals, with their points bent: the stamina are five erect, subulated filaments, of the length of the corolla: the antheræ are incumbent, and hid at the base: the germen is turbinate, and surrounded with the receptacle: the style is simple, and very short: the stigma is simple. The fruit is a globose berry, having only one cell: the seeds are five in number, large, gibbous, and angulated on one part.

HEDERA.

Tree Ivy.

The root is woody and ramified: the stem is woody, tough, and tortuous; it supports itself by twisting round trees, or fixing it's radiculae into their bark, or into walls, &c. and grows to ten, twenty, or more feet high. While young, it's leaves are oval and pointed; afterwards it produces angulated leaves, and, finally, often toward it's top oval or oblong ones again. In it's different states it is called by authors, 1. *Hedera humi repens*. 2. *Hedera helix*. 3. *Hedera arborea corymbosa*: a fine way of multiplying species. It's flowers are small and greenish; they stand in clusters, and are succeeded by berries of the size of peas. Some of the seeds of the Ivy were lately produced, as falling from the clouds in a hail-storm; and a distinguished member of the Royal Society declared them to be the seeds of a wild garlic; they are easily dislodged from trees and buildings by storms, and the same mistake of their being rained down has often happened; they have been sometimes taken for wheat.

Another variety of this plant, with yellow berries, has been described by authors as a new species, under the names of *Hedera poetica*, and *Hedera Dionysias*: Plumier has also described another variety of it, under the name of *Hedera Americana folio hastato*.

The common Ivy is found in all parts of England. Authors call it, *Hedera* and *Hedera arborea*.

VITIS.

THE calyx of the *Vitis* is a perianthium so small, as scarce to be discernible; it is divided into five parts: the corolla consists of five small, deciduous, rude petals, growing together at their extremities: the stamina are five deciduous, erecto-patent filaments: the antheræ are simple; the fruit is a large, round berry, containing only one cell: the seeds are five; they are ossious, semi-orbicular, but turbinate, cordated, and narrow at the base.

1. *Vitis*

1. *Vitis foliis palmato-angulatis*
The palmato-angulated-leaved *Vitis*.

The common *Uine*.

The root is woody and divaricated; the stem is angulated, and covered with a loose, brown crust; the wood tough and fibrous: it grows, when properly supported, to twenty feet high; the leaves stand singly, on long pedicles; they are large, palmated, angulated, of a bright green, and sour taste: the flowers are very small and green, and the berries round.

This species varies extremely in the size and colour of the fruit, and also of the leaf; and we owe to these varieties the names of a great number of imaginary species in the botanical writers.

This is a native of France, Italy, and Germany. C. Bauhine calls it, *Vitis vinifera*.

2. *Vitis foliis laciniatis*.
The laciniated-leaved *Vitis*.

Darky
Uine.

The root is woody and divaricated; the stem angular; the bark brown and loose, or peeling; the leaves stand single, on shorter pedicles than in the former, and are divided, to the middle, into a multitude of irregular segments: the fruit is large, round, and green.

This is a native of Germany. J. Bauhine calls it, *Vitis aspi folio*.

3. *Vitis folio angulato serrato*.
The angulated, serrated-leaved *Vitis*.

The
Uine.

The root is fibrous, but woody; the stem slender, round, and tough; the bark is of a dark brown, and smooth; the leaves stand singly on long pedicles; they are of a kind of triangular figure, with two angular protuberances at the base; they are three inches long, and two broad: the fruit is small.

This is a native of America. Plumier calls it, *Vitis baderæ folio, serrato*. Dr Hughes, in a late history of Barbadoes, has considerably increased the number of American vines, by adding all the *Convolvuli*, and indeed every other climbing plant to them, under the name of Vine.

RIBES.

THE calyx is a ventricose, one-leaved perianthium, divided into five oblong, obtuse, hollow segments; they are coloured and permanent: the corolla consists of five small, obtuse, erect petals, inserted into the margin of the cup; the stamina are five, erect, subulated filaments, inserted also into the cup; the anthers are incumbent, compressed, and they split at the edge: the germen is roundish, and stands below the cup: the style is bifid; the stigmata are obtuse; the fruit is a globose, umbilicated berry, containing only one cell, with two lateral, opposite, longitudinal receptacles: the seeds are numerous, roundish, and somewhat compressed.

This genus comprehends the *Ribesum* of Dillenius, and the *Ribes* and *Grassolæria* of other authors.

1. *Ribes inerme floribus planiusculis, racemis pendulis*.
The pendulous-clustered *Ribes*, with plain flowers, and
without prickles.

The Currant.

The root is woody, ramose, and fibrated; the stems arise many together, and grow to three, four, or five feet high; they are round, weak, covered with a pale bark, and full of pith: the leaves are broad, serrated, and serrated; the flowers are moderately large, and greenish; they hang in long clusters, and are succeeded by round berries, of the size of peas.

The shrub is a native of Germany, and is cultivated every-where in gardens. The fruit varies in colour; and authors have hence made different species of it, under the names of *Ribes fructu rubro*, and *Ribes fructu albo*.

2. *Ribes*

2. *Ribes inerme floribus oblongis.**The long-flowered Ribes, without prickles.***The Black Currant.**

The root is woody, ramose, and fibrated; the stems numerous, round, slender three feet high, and covered with a pale bark; the leaves are large, palmated, and sinuated, hairy underneath, and of a bad smell: the flowers are oblong and hollow; the berries black, and as big as a large pea; they are of a disagreeable taste.

It is a native of England, but is not common with us, except in gardens. J. Bauhine calls it, *Ribes nigrum vulgo dictum folio olente*.

3. *Ribes ramis subaculeatis reclinatis.**The reclinated and somewhat prickly-branched Ribes.***The Purple Gooseberry.**

The root is woody, and divaricated; the stem an inch thick; the branches droop downwards, and have a smooth, pale bark; the leaves are short, broad, lacinated, and of a dark green: the squammæ of the buds, when they burst, have a number of capitated hairs round the edge: the fruit stands on single short pedicles, and is large, and of a blackish purple: the flowers are small and green.

This is a native of Germany, and is common in our gardens. Clusius calls it, *Grossularia fructu obscure purpurascens*.

The varieties of the Currant and Gooseberry are endless. Of the number of the certainly distinct species are, 1. The more prickly, narrow-leaved Ribes. 2. The less-prickly, smaller-leaved Ribes. 3. The broader, undivided-leaved, American Ribes. 4. The narrower, undivided-leaved, American Ribes.

CUPANIA.

THE calyx is a plane, permanent perianthium, formed of three oval, acute leaves, exceeding the petals in size: the corolla consists of five small, roundish, patent petals: the stamina are five subulated filaments, of the length of the corolla; the antheræ are roundish; the germen is oval; the style is very small and bifid: the stigmata are obtuse; the fruit is a coriaceous capsule, of a turbinate-oval figure, formed of three valves, and containing only one cell: the seeds are six in number, and roundish; each has a proper receptacle of a campanulated figure, crenated, and surrounding it.

It is an American, described by Plumier.

I T E A.

THE calyx is a very small, erect, acuminate, permanent perianthium, formed of one leaf, and divided into five segments at top. The corolla is composed of five long, lanceolated, acute, patent petals: the stamina are five, subulated, erect, filaments, of the length of the corolla: the antheræ are roundish; the germen is oval; the style cylindric, and of the length of the stamina; and permanent: the stigma is obtuse; the fruit is an oval capsule, of many times the length of the cup, mucronated with the style, and formed of two valves cohering at the points: the cell is single; the seeds are numerous and small.

It is a native of North America, and is described by Gronovius, in his *Flora Virginica*. The characters sufficiently distinguish it.

CELASTRUS.

THE calyx is a very small, plane perianthium, formed of one leaf, divided into five unequal, obtuse segments: the corolla consists of five equal, oval, patent, sessile petals, with their ends turned back: the stamina are five subulated filaments, of the length of the corolla; the antheræ very small; the germen is also very small, and is immersed in a large plane receptacle, marked with ten striae; the style is subulated, and shorter than the stamina; the stigma is obtuse and trifid; the fruit is a coloured oval capsule, obtusely trigonal, gibbous, formed of three valves, and containing three cells,

cells, in each of which are some oval, coloured seeds, smooth, and half covered by a calyptra, which is also coloured, and has an unequal rim divided into four parts.

There is a species with a triple stigma, and no style.

CEANOTHUS.

THE calyx is a perianthium, formed of a single leaf, divided into five segments at the edge: the corolla is composed of a number of arched petals, of a hollowed figure; the stamina are five filiform filaments; the germen is oblong; the style short and slender; the stigma large; the fruit is an oblong, dry berry; with three cells in it, and three seeds in each.

Ceanothus corymbis folio longioribus.

The Ceanothus, with the corymbi longer than the leaves.

The root is woody and divaricated; the stem is a third of an inch in diameter, rarely more; the bark is of a pale brown: the branches are not numerous; their bark is reddish. The leaves stand irregularly; they have reddish pedicles, half an inch long, and are themselves three inches long, an inch and half broad, and terminate in a point. They are of a pale green colour, and crenated at the edge: the flowers stand in large umbels, on the extremities of the branches; they are small, white, and without smell; the fruit is small, and of a brownish red.

The shrub is a native of Virginia and Carolina. Plukenet calls it, *Eucnymus jujubinis foliis Caroliniensis, fructu parvo fere umbellato*. Isard, *Eucnymoides Zizyphi foliis*.

DIOSMA.

THE calyx is a perianthium, divided into five narrow, acute, permanent segments, and with a flat base: the corolla consists of five oval, obtuse, sessile, erecto-patulous petals, of the length of the cup: the nectarium stands on the germen, in form of a corona, and is hollowed, obtuse, and divided into five parts: the stamina are five subulated filaments: the antheræ are oval and erect: the germen is covered by the nectarium: the style is simple, of the length of the stamina; and the stigma is obsolete. The fruit consists of five compressed, ovato-acuminated capsules, joined together by their inner edges with the points, distant from one another, and all opening at the upper part by a suture: the seeds are single, oblong, of a depressed, oval figure, and pointed at the top; and each is wrapped up in a cartilaginous, elastic membrane. It is observable, the fruit of this *Diosma* agrees with the fruit called *Anisum stellatum*, not only in shape and structure, but in smell.

Commelin and others have described the *Diosma* under the name of *Spirea*; but the difference is sufficiently evident from the characters.

LAGOECIA.

THE universal involucreum is formed of eight leaves, which are pennato-dentated, ciliated, and reflex; this surrounds a number of pedicles, each of which has a single flower on it, and the whole are collected into a head by it. The proper involucreum consists of four capillaceo-pennated leaves, and surrounds a single peduncle, which is very short. The proper perianthium stands on the germen, and is formed of five capillaceo-multifid leaves: the corolla consists of five petals, very short and bicornate: the stamina are five capillary filaments, of the length of the corolla; the antheræ are roundish; the germen is roundish: the style is of the length of the stamina: the stigma is simple: there is no perianthium: the seeds are single, of an ovato-oblong figure, and coronated with the perianthium.

Of this genus there is only one known species.

LAGOECIA.

Round-headed Cummin.

The root is composed of a cluster of fibres: the stalk is round, hollow, and weak; it rises to about six or eight inches high, and is divided into a multitude of ramifications: the leaves are four inches long, pinnated, and of a dusky green: the pinnae are oblong, broad, and serrated at the edges. At the tops of the branches stand roundish heads, or clusters of flowers; the whole head appears whitish and hairy. It is very ill referred, by authors, to the Cummin. It has neither the appearance, smell, or taste of that plant: its smell is more like that of the carrot.

It is a native of Syria; we have it in some of our gardens. Tournefort calls it; *Cuminum orientale*; Camerarius, *Cuminum sylvestre*; and C. Bauhine, *Cuminum sylvestre capitulis globosis*.

BRUNIA.

THE common perianthium is roundish, imbricated, composed of a number of narrow, pointed leaves, and containing several flowers. The proper perianthium is composed of five oblong, hairy leaves, shorter than the corolla: the corolla consists of five petals; their ungues are slender, and of the length of the cup; their bractæ roundish and patent: the stamina are five capillary, flaccid filaments, longer than the corolla, and affixed to the ungues of the petals: the germen is very small; the style is simple, and of the length of the corolla; the stigma is bifid; there is no pericarpium: the common receptacle of the fructifications separates the perianthia by its hairy squammæ: the seeds are single, and somewhat hairy. Breynius calls this, *Cypripinulus*, Cent. 1. 10.

CLAYTONIA.

THE calyx is a bivalve perianthium; the leaves are oval, erect, equal, obtuse and permanent. The corolla consists of five large, erect petals, of an oval, oblong figure, and emarginated: the stamina are five crooked, setaceous filaments, a little shorter than the corolla: the antheræ are oblong and incumbent: the germen is roundish; the style is simple, and of the length of the stamina: the stigma is bifid: the fruit is a capsule of a roundish figure, containing three cells, and in each three roundish seeds.

Claytonia foliis obverse ovatis.

The obversely-oval-leaved Claytonia.

The root is fibrous; the radical leaves are numerous, of an obversely oval figure, the top being round and broad, the base narrow, and forming a furrowed pedicle below; they are smooth, nervous, and even at the edges: the stalk is round, and does not exceed the radical leaves in height; at its top there stand two sessile, obversely oval, short leaves, opposite to one another: the flowers are large, and of a beautiful red.

It is a native of Siberia; we have it in some of our gardens. It is described in the Stockholm Acts, under the name of *Linnaia*.

CELOSIA.

THE calyx is a perianthium, formed of three acute, lanceolated, dry, permanent leaves, and resembling a corolla: the corolla consists of five erect, lanceolated, acute, rigid, and permanent petals: the nectarium is a very small margin, surrounding the germen; the stamina are five subulated filaments, of the length of the corolla: the antheræ are versatile; the germen is globose; the style is strait, subulated, and of the length of the stamina: the stigma is simple: the fruit is a globose capsule, surrounded with the corolla. It is formed into only one cell, and opens horizontally: the seeds are roundish and emarginated.

Celosia

Celosia foliis lanceolato-ovatis.
The lanceolato-oval-leaved Celosia.

**Crested
 Amaranth.**

The root is oblong and thick; the stalk is round, thick, striated, and of a mixed purple and green colour; toward the ground it is all over of a deep purple, and the bark full of a blood-coloured juice. It grows to four feet high; the leaves stand alternately, and at small distances from one another; they are eight or ten inches long, narrow, of a deep green, and pointed at the extremity. On the top of the stalk, and of the several lateral branches, stand broad, and, as it were, reticulated spikes of flowers, of a beautiful purple. The whole spike is often a foot and half long, curled at the edges, and bending down with the weight of the top; they are often three or four inches broad.

It is a native of the East Indies. C. Bauhine calls it, *Amaranthus panicula incurva*; Camerarius, *Amaranthus cristatus*. It is subject to great variations from culture. The colour of the spike, which is naturally of a fine strong scarlet, will become of all the degrees of red, of a gold yellow, and of a thousand admixtures of red, yellow, and green. To these accidental variations of the plant we owe the names of more than thirty imaginary species in the botanical writers.

Of the number of these are the *Amaranthus spicatus sericeus flore luteo virescente*; *Amaranthus spicis carnis*, &c. The error of confounding this with the *Amaranthus* is also a very gross one: the characters are perfectly different.

Class the Fifth. Order the First.

Division the Seventh.

Pentandria Monogynia, with incomplete flowers.

ACHYRANTHUS.

THE calyx is a perianthium, composed of five lanceolated, acute, rigid, pungent, and permanent dry leaves; there is no corolla: the stamina are five short filaments; the antheræ are small; the germen is roundish; the style is simple, of the length of the stamina; the stigma is bifid. There is no pericarpium: the seed is single, roundish, and compressed.

Dillenius has figured this plant in his *Hortus Elthamensis*, but the characters alone are a sufficient distinction.

THESIUM.

THE calyx is a turbinated, permanent perianthium, formed of a single leaf, divided into five short, semi-lanceolated, erect, obtuse segments. There is no corolla, but the calyx, being coloured on the inside, has passed for a corolla with some: the stamina are five subululated filaments, shorter than the cup, and affixed to the base of the segments: the antheræ are roundish; the germen is placed below the receptacle; the style is filiform, and of the length of the stamina: the stigma is thick and obtuse; there is no pericarpium: the calyx holds in it's bottom a single, roundish seed.

There is but one known species of this genus, and the characters sufficiently distinguish it.

GLAUX.

THERE is no calyx. The corolla is a single, campanulated, erect, permanent petal, divided into five obtuse, revoluted segments: the stamina are five subululated, erect filaments, of the length of the corolla: the antheræ are roundish; the germen is oval; the style is filiform, and of the length of the stamina: the stigma is capitated: the fruit is a globose, but acuminate, capsule, formed of five valves, containing a single cell, and in it five roundish seeds, with a great roundish receptacle, hollowed by the seeds.

GLAUX.

GLAUX.

The root is a cluster of short, white fibres. The stalks are numerous, and grow to four or five inches long; they are procumbent in part, and send out many fibres from their joints, where they touch the ground. The leaves are small, oblong, and stand two at a joint without pedicles: the flowers are small, of a purplish colour, and stand in the axils of the leaves.

The plant is frequent about our sea-coasts. C. Bauhine calls it, *Glaux maritima*; others, *Glaux exigua maritima*. The flowers are sometimes white, sometimes striated with red, the ground colour being a dusky white.

ILLECEBERUM.

THE calyx is a permanent, pentagonal perianthium, composed of five thick, erect, compressed leaves, each terminating in a hair, their tops distant, and the whole hollowed inward: there is no corolla. The stamina are five capillary filaments within the cup; the antheræ are simple; the germen is ovated and acute, and terminates in a short style: the stigma is bifid? the fruit is a capsule, approaching to a roundish figure, but pointed at each end; formed of five valves, containing only one cell, and covered by the calyx. The seed is single, large, roundish, and pointed at each end.

Illecebrum caulibus procumbentibus.

The procumbent-stalked Illecebrum.

The root is oblong, slender, white, and furnished with a number of fibres. The stalks are round, jointed, procumbent, of a reddish colour, and spread every way on the ground: the leaves are placed two at a joint; they are short, of an oval figure, somewhat like the leaves of the *serpyllum*, and hollow. The joints are about an inch distant from each other; and, beside these two leaves, there are a number of little white flowers, standing in a kind of verticillate clusters surrounding the stalks.

It is frequent in Cornwall and Devonshire, in wet places. C. Bauhine calls it, *Polygala repens nives*; J. Bauhine, *Polygoum parvum flore albo verticillato*.

Class the Fifth. Order the First.

Division the Eighth.

Pentandria Monogynia, with the segments of the corolla bent obliquely to the right.

CERBERA.

THE calyx is a small, erect, acuminate perianthium, formed of a single leaf, divided into five segments at the edge: the corolla consists of a single, infundibuliform petal, and the tube is elevated: the limb is large, and divided into five segments; they are lanceolated in figure, and bent to the right: the nectarium is pentangular, divided into five parts, erecto-stellate, and placed at the mouth of the tube: the stamina are five subulated filaments, placed in the middle of the tube; the antheræ are erect and connivent; the germen is globose; the style is filiform, and short; the stigma is capitated; the fruit is a large, roundish, fleshy drupe, marked with a longitudinal furrow on the side, and containing two cells, in each of which is a single seed of an oval figure.

This genus comprehends the *Cerbera* and the *Thevetia* of Linnæus, for the characters are the same; and the *Abovai* of Tournefort.

1. *Cerbera foliis lanceolatis.*

The lanceolated-leaved Cerbera.

The root is large and brachiated; the tree grows to thirty feet high, or more; its trunk is often two feet in diameter; the bark is of a pale, whitish colour, and smooth; the

the wood moderately firm : when the young branches are cut, they emit a milky juice, and both this and the dry wood stink so intolerably, that the natives cannot use the wood so much as to burn ; the smell is much like that of human excrement : the leaves remain green all the year ; they are three inches long, two broad, and of a lanceolated shape. The flower is moderately large ; the fruit poisonous.

It is a native of the East and West Indies. Tournefort calls it, *Ahovai Theveti*.

RAUVOLFIA.

THE calyx is a very small, permanent perianthium, divided into five segments : the corolla is a single petal, of an infundibuliform shape : the tube is cylindricoglobose : the limb is plane, and is divided into five roundish, truncated segments : the stamina are five filaments, shorter than the tube ; the antheræ are erect and simple : the germen is roundish ; the style is very short ; the stigma capitated : the fruit is a large, globose berry, lactescent, containing only one cell, and in it two compressed, cordated seeds.

It is an American, described by Plumier, 40.

VINCA.

THE calyx is an erect, acute, permanent perianthium, formed of one leaf, divided into five segments : the corolla consists of a single, hypocrateriform petal : the tube is longer than the cup, and is cylindric at the bottom ; broader toward the top, marked with five lines, and has a pentagonal mouth. The limb is horizontal, and divided into five segments, growing to the top of the tube, broader upwards, and obliquely truncated at the top : the stamina are five very short, inflex, and retroflex filaments : the antheræ are membranaceous, obtuse, erect, crooked, and loaded with farina at each side : the germen are two, and roundish, and at their sides lie two other roundish bodies : the style is single, common to both ; it is cylindric, and of the length of the stamina : the stigmata are two, and perpendicular ; the lower one is orbicular and plane ; the upper one is capitated and hollowed. The pericarpium consists of two erect, cylindric, long folliculi, formed of one valve, and opening longitudinally : the seeds are numerous, oblong, cylindric, and sulcated.

Vinca foliis ovatis.

The oval-leaved Vinca.

**Common Pert-
Winkle.**

The root is fibrous ; the stalks are procumbent, and take root, as they run along the ground, often growing thus to a great length : the leaves stand in pairs ; they have short pedicles, and are of an oval figure, about an inch long, of a dark green colour, shining, even at the edges, and thick and rigid. The flowers stand singly on pedicles of three inches long, arising from the axæ of the leaves ; they are large, and of a beautiful blue.

It is common in England, but probably only as it has escaped from gardens ; in Germany it is native. C. Bauhine calls it, *Clematis daphnoides minor* ; *Dodonæus*, *Clematis daphnoides*. Tournefort has made eight or ten species out of this, differing in size, and in the colour of the flower, as the red, white, &c.

NERIUM.

THE calyx is a very small, acute, permanent perianthium, divided into five segments at the top ; the corolla consists of a single, infundibuliform petal : the tube is cylindric, and shorter than the cup ; the limb very large, and divided into five broad, obtuse, oblique segments : the nectarium is short, and torn, as it were, into a number of capillary segments ; it forms a corona, terminating the tube : the stamina are five very short filaments, in the tube of the corolla : the antheræ are sagittated, connivent, and terminated by a long filament : the germen is roundish and blind ; the styles are very short ; the stigmata simple : the fruit consists of two cylindric, acuminate, long, erect follicles, formed each of one valve, and opening longitudinally : the seeds

are numerous, oblong, coronated with a downy matter, and placed in an imbricated manner.

Nerium foliis ternis lineari-lanceolatis.

The Nerium, with lineari-lanceolated leaves, three at a joint. Rose-bay.

The root is woody and branched: the trunk is woody, an inch and a half in diameter, often much more, and grows to eight, or more, feet high; it divides into many branches, which stand erect, and are furnished with leaves, usually three at a joint; these are four inches long, an inch broad, nearly of the same diameter all the way, only rising from a narrow base, and terminating in a point; they are rigid, and of a greyish colour. The flowers stand in clusters, on the tops of the branches; they are very large, and of a beautiful red, sometimes white.

It is a native of Syria and the East Indies, and of some of the southern parts of Europe, and is frequent in our gardens. Dodonæus calls it, *Rhododendrum*; Lobel, *Oleander* and *Laurus roses*; C. Bauhine, *Nerium rubro flore*.

The other species are, 1. The tuberous-rooted, scandent *Nerium*. 2. The narrower-leaved, Indian *Nerium*: and, 3. The broader-leaved, smaller-flowered, Indian *Nerium*.

PLUMERIA.

THE calyx is an extremely small, obtuse perianthium, divided into five parts: the corolla consists of a single, infundibuliform petal: the tube is long, and grows broader towards it's top: the limb is erecto-patent, and divided into five oblong, oval segments, bent toward the right: the stamina are five subulated filaments, growing out of the middle of the tube: the antheræ are connivent: the germen is oblong and bifid: there are scarce any styles: the stigma is double and acuminate. The fruit is composed of two long, pointed, ventricose follicles, formed of a single valve each, and containing a single cell, and naturally bending downwards, and nutant: the seeds are numerous, oblong, imbricated, and inserted into a large, oval membrane, at the base.

CAMERARIA.

THE calyx is a very small, acute, connivent perianthium, formed of a single leaf, divided into five parts: the corolla consists of a single, infundibuliform petal: the tube is cylindric, long, and ventricose both at the base and at the top: the limb is plane, and is divided into five lanceolated segments: the stamina are five very small filaments, placed in the middle of the tube: the antheræ are connivent: the germina are two, and have two appendages at their sides: there are scarce any styli, and the stigmata are obsolete. The fruit is composed of two oblong follicles, bent horizontally, obtuse at both ends, and sending out a lobe on each side near the base; they are formed each of one valve, and have only one cell. The seeds are numerous, oval, and imbricated, and inserted into a large, oval membrane at the base.

It is an American, described by Plumier.

TABERNOMONTANA.

THE perianthium is very small, divided into five parts, acute and connivent: the corolla consists of a single, infundibuliform petal: the tube is cylindric and long; the base and apex of it are both ventricose: the limb is divided into five linear, obtuse segments: the stamina are five very small filaments, placed in the middle of the tube: the antheræ are connivent: the germina are two, and simple: the style is subulated; the stigmata are obsolete. The fruit is composed of two follicles, bent horizontally, ventricose and acuminate, formed of one valve, and containing one cell: the seeds are numerous, of an oblong, oval figure, obtuse, imbricated, and wrapped up in pulp.

It is common to America and to the East Indies, and is described by Plumier, and in the *Hortus Malabaricus*, 1. 46.

CEROPEGIA.

CEROPEGIA.

THE calyx is a small, permanent perianthium, formed of a single leaf, divided into five short segments at the end: the corolla consists of a single petal: the base is large and globose; the tube, which terminates this is cylindric and long: the limb is very small, quinque-dentate, acuminate with the tops of the segments, connivent, and open at their sides: the stamina are five small, crooked, connivent filaments, at the bottom of the corolla: the anthers are small; the germen is extremely small; there is scarce any style: the stigmata are two. The fruit is composed of two cylindric and very long follicles, straight, acuminate, formed each of one valve, and containing one cell: the seeds are oblong, numerous, imbricated, and crowned with down.

It is a native of the East Indies, and is described in the Hortus Malabaricus, 9, 26.

Class the Fifth. Order the Second.

PENTANDRIA DIGYNIA.

Plants which have in each flower five stamina and two styles.

OF these there are several distinct series, to be separated into so many divisions: 1. Some have the segments of the corolla bent obliquely to the right. 2. Some have only one seed after each flower. 3. Others have several seeds after each. 4. Some have two naked seeds and a simple umbel. 5. Some have two naked seeds, and a universal and partial involucre. 6. Some have two naked seeds, with only a partial involucre. 7. Some have two naked seeds, and no involucre.

Class the Fifth. Order the Second.

Division the First.

Pentandria Digynia, with the segments of the corolla bent obliquely to the right.

STAPELIA.

THE calyx is a perianthium, formed of one leaf, divided into five segments, acute, small, and permanent: the corolla consists of a single, large, plane petal, divided beyond the middle into five segments, which are broad, plane, and acuminate: the nectarium is a plane, little star, of five points; the segments are linear, their apices lacerated, and they surround the parts of fructification; and there is also another plane, little star, of five acute, undivided rays, covering the same parts: the stamina are five plane, erect, broad filaments: the anthers are linear, and affixed each way to the side of the filament: the germina are two, of an oval figure, and plane within: there are no styles: the stigmata are obsolete. The fruit consists of two oblong, subulated follicles, formed of one valve, and containing one cell: the seeds are numerous, imbricated, compressed, and papose: in some species there is a plane, orbicular body, placed under the stars.

Stapelia denticulis ramorum extrorsum prominulis.

The Stapelia with the denticles of the branches prominent outwards.

The root is composed of four white fibres. The stalk is succulent, of the thickness of a man's finger, and not more than eight or ten inches long, usually procumbent, sometimes rising obliquely; while young, green, but afterwards purple: it is divided into a number of ramifications, and is of a kind of trigonal figure, denticulated, and the denticles rising into a kind of tubercles, armed with prickles; it is full of an acrid juice,

juice, and has no leaf on it. In the axæ of the denticles there stand short, succulent, greenish, or purplish, pedicles, divided into three fine, foliaceous points at the extremity, and each supporting a large yellow flower.

It is a native of the Cape of Good Hope. Herman calls it, *Apocynum humile aizoides filiquis erectis Africanum*.

ASCLEPIAS.

THE calyx is a permanent perianthium, divided into five segments, acute and small: the corolla consists of a single petal, plane or reflex, divided into five oval, acuminate segments: the nectaria are five in number, and surround the parts of fructification; each of them is of an oval figure, but obliquely anticulated outward, and from the base of this auricle, arises an acute corniculum, bent towards the parts of fructification: the parts of fructification are covered by a truncated body, surrounded with five squamule, and opening at the sides by a many fissures; there are scarce any filaments: the anthers are five; they are affixed to the truncated body of the nectarium, within the squamule: the germina are two, of an oval figure, and acuminate: there are scarce any styles; the stigmata are simple. The fruit consists of two large, oblong follicles, ventricose, and pointed, formed each of one valve, and containing only one cell: the seeds are numerous, imbricated, and, winged with down: the receptacle is membranaceous and free.

This genus comprehends the *Asclepias* and the *Apocynum* of authors. In the *Asclepias* the corolla is plane, in the *Apocynum* it is reflex; but, as the nectaria, and all the other parts of fructification, are alike in both, this is to be regarded no more than as a specific, not a generical difference.

1. *Asclepias caule erecto simplicissimo herbaceo, foliis cordato-lanceolatis, racemis conglomeratis alternis.*

The erect, herbaceous, simple-stalked *Asclepias*, with cordated-lanceolated leaves, and alternate, conglomerated clusters.

White Swallowwort.

The root is fibrous and white: the stalk is round, thick, hairy, jointed, erect, and without divarication. The leaves stand two at a joint; they are two inches long, an inch broad, cordated at the base, and lanceolated; they stand on very short pedicles, which rise upwards; the ribs are hairy. From the axæ of the leaves arise pedicles, on each of which stands a cluster of white, small flowers: the pods are an inch and a half long, and the seeds winged with a very fine down.

This is a native of Germany. C. Bauhine calls it; *Asclepias flore albo*; Dodonæus, *Vincetoxicum*.

2. *Asclepias caule subvolubili herbaceo, foliis ovatis lanceolatis, floribus consertis patentissimis.*

The herbaceous-stalked *Asclepias*, with oval, lanceolated leaves, and open, clustered flowers.

Black Swallowwort.

The root is composed of a number of large fibres. The stalk is round, tender, weak, and supports itself by twining about any thing near it; by this means it will be carried to four or five feet high: toward the top it is usually branched. The leaves are large, oblong, somewhat oval, but pointed at the extremity; they are smooth, soft, and succulent. The flowers stand in clusters, and are small, patent, and of a very deep purple, almost black. The pods are long, and the seed winged with a very fine down. The whole plant abounds with an acrid, milky, but yellowish, juice.

It is a native of France and Germany. C. Bauhine calls it, *Asclepias pullo flore*; J. Bauhine, *Asclepias flore nigro quorundam*.

3. *Asclepias caule erecto simplici herbaceo, foliis ovalibus subtus tomentosis, umbellis nutantibus.*

The simple, erect, herbaceous-stalked *Asclepias*, with oval leaves and nutant umbels.

Syrian Dog's-bane.

The root is composed of a multitude of large fibres. The stalk is round, erect, and hairy; it grows to four feet high. The leaves stand in pairs; they are large, and of an oblong, oval figure, of a dusky green on the upper side, but whitish and hairy underneath. The flowers are small and purple; they stand a great number together, forming a kind of umbel.

It is a native of Syria. Cornutus calls it, *Apocynum majus Syriacum rectum*; Vellingius, *Beideloffar*.

4. *Asclepias foliis rotundo-ovatis, caule fruticoso.* Round-leaved

The shrubby-stalked, roundish-oval leaved *Asclepias*. Dog's-bane.

The root is fibrous; the stalk is round, hard, woody, not very thick, and divides into several branches. The leaves are almost round, or between that and oval; they are smooth, green, and of a shining surface. The flowers are small, and of a pale red.

It is a native of Egypt. Vellingius calls it, *Apocynum folio rotundiore*. We have it frequently in our gardens.

The other species of the *Asclepias* are very numerous. The more singular are, of those called by authors *Asclepiades*. 1. The narrow-leaved, yellow *Asclepias*. 2. The Cretic *Asclepias*, with bifid pods. 3. The tall, erect, purple *Asclepias*. 4. The broad-leaved, purple *Asclepias*. Of those called *Apocyna*. 1. The broad-leaved, hoary *Apocynum* of Malabar. 2. The broad-leaved, purple, American *Apocynum*. 3. The green-stalked, white-flowered, Syrian *Apocynum*. 4. The long-podded, long-leaved *Apocynum*. 5. The willow-leaved, purple *Apocynum*. 6. The tuberous-rooted, orange-flowered *Apocynum*. 7. The nerium-leaved *Apocynum*. 8. The undulated-leaved, hairy *Apocynum*. 9. The periwinkle-leaved *Apocynum*. 10. The digitated-leaved *Apocynum*. 11. The orange-leaved *Apocynum*. 12. The *Apocynum* of the Canaries. 13. The narrow toad, flax-leaved *Apocynum*. 14. The round-leaved, scandent *Apocynum*.

PERIPLUCA.

THE calyx is a very small perianthium, divided into five oval, permanent segments: the corolla consists of a single petal, plane, and divided into five oblong, linear, truncated, and emarginated segments: the nectarium is very small, and surrounds the center of the petal, and emits five crooked filaments from it's sides, shorter than the segments of the corolla, and placed alternately with them: the stamina are five very short filaments: the antheræ are erect and connivent: the germen is small and bifid: there are scarce any styles: the stigmata are simple. The fruit consists of two large, oblong, ventricose follicles, each formed of a single valve, and containing one cell: the seeds are numerous, imbricated, and coronated with down: the receptacle is longitudinal and capillary.

1. *Periploca foliis lanceolatis, caulibus fruticosis volubilibus.*

The shrubby, twining-stalked *Periploca*, with lanceolated leaves.

Climbing Dog's-bane.

The root is woody, and divaricated; the stalks are round, slender, woody, and covered with a brown bark; they rise by the help of trees, which they twist themselves about, to the height of thirty feet. The leaves stand in pairs; they are oblong, broadest in the middle, and pointed at the end. The flowers stand four or five together, forming a kind of umbel; they are small, and of a dusky purple.

It is a native of many parts of America. C. Bauhine calls it, *Apocynum oblongo folio*; others, *Periploca repens angustifolia*, and *Periploca folio longo flore purpurante*.

The other species of *Periploca* are, 1. The narrow-leaved *Periploca*. 2. The roundish-leaved *Periploca*. 3. The acute-leaved *Periploca*. 4. The echinated-fruited *Periploca*. 5. The hard-podded *Periploca*. 6. The climbing, willow-leaved *Periploca*. 7. The procumbent, diffuse, toad, flax-leaved *Periploca*. 8. The citron-leaved, purple, umbellated-flowered *Periploca*. 9. The short and roundish-leaved *Periploca*. 10. The sagittated-leaved *Periploca*. 11. The citron-leaved *Periploca*, with great fruit.

CYNANCHUM.

THE calyx is a very small, erect, permanent perianthium, divided into five segments: the corolla consists of a single petal: there is scarce any tube: the limb is plane, and is divided into five long, linear segments: the nectarium is placed in the center of the flower; it is long, erect, cylindric, and divided into five parts at the top: the stamina are five parallel filaments, of the length of the nectarium: the anthers are contiguous, and are placed within the mouth of the corolla: the germen is oblong and bifid: there is scarce any style: the stigmata are two, and obtuse. The fruit is composed of two oblong, acuminate follicles, formed each of one valve, and containing one cell; they open longitudinally, and contain numerous, oblong seeds, placed imbricatedly, and winged with down.

Cynanchum caule volubili, foliis cordato-lanceolatis glabris.

The climbing Cynanchum, with cordato-lanceolated, smooth leaves.

The root is oblong, creeping, brittle, and white. The stalk is firm and climbing; it winds itself about any thing near, and is so carried up to a great height. The leaves are two inches long, and an inch and a half broad; they are cordated, and surround the stalk at the base, from whence they gradually become sinuate to the point; they are so full of milky juice, that the least bruise brings it out in abundance. The flowers are small and white; they stand in umbels all along the stalks.

It is a native of Persia, and some of the southern parts of Europe; we have it in gardens. Dodonæus calls it, *Periploca prior*; J. Bauhine, *Apocynum latifolium amplexicaule*.

APOCYNUM.

THE calyx is a perianthium, formed of one leaf, divided into five segments at the end, erect, small, and permanent: the corolla consists of a single petal, of a campanulated, roundish form, lightly divided into five segments, which are revolute; there is no other nectarium. The stamina are five filaments, scarce visible: the anthers are oblong, erect, acute, bifid at the base, and connivent: the germen are two, and oval: the styles are scarce visible: the stigmata are globose, and as large as the germen. The fruit is composed of two oblong, acuminate follicles, each formed of one valve, and containing one cell: the seeds are numerous, very small, and coronated with long down: the receptacle is subulate, very long, rough, and free.

1. *Apocynum foliis lanceolatis, corymbis terminatricibus.*

The lanceolate-leaved Apocynum, with terminatory corymbi.

The root is creeping, white, and moderately thick: the stalk is round, thick, rigid, and smooth. The leaves are three inches long, and an inch and a half broad; they are placed in pairs, and are broadest in the middle, and terminate in a point. The flowers stand only at the tops of the branches, in large tufts or umbels, as it were; they are moderately large, and of a beautiful pale red. The plant grows to four feet high.

It is a native of Syria and Greece, but we have it in our gardens. J. Bauhine calls it, *Apocynum oblonga lato folio*.

2. *Apocynum*

2. *Apocynum foliis ovatis.**The oval-leaved Apocynum.*

This is a low plant: the root is creeping, and of the thickness of a crow-quill. The stalks are woody, and a foot high; they are round, smooth, and divided into several ramifications. The leaves stand in pairs; on short pedicles; they are an inch and a half long, and an inch broad, of a figure approaching to oval, and of a deep green colour. The flowers are of the size of those of the lily of the valley, and somewhat resemble them in shape; they are of a beautiful pale red.

It is a native of America. Boccone calls it, *Apocynum Canadense foliis androsæmi majoris*; Ray, *Apocynum flore lillii convallii*. We have it in our gardens.

*Class the Fifth. Order the Second.**Division the Second.**Pentandria Digynia, with only one seed after each flower.*

H E R N I A R I A.

THE calyx is a one-leaved perianthium, divided into five segments at the end, acute, patent, coloured on the inside, and permanent: there is no corolla: the stamina are five very minute filaments: the antheræ are simple: the germen is oval: the style is very short, scarce visible: the stigmata are two, acuminate, and of the length of the style. The fruit is a small capsule, placed in the bottom of the cup, covered, and hardly splitting: the seed is single, ovato-acuminated, and smooth.

This genus comprehends the *Herniaria* and *Partenychiodes* of Tournefort.

1. *Herniaria fœscolorum glomerulis subrotundis.**The Herniaria, with roundish tufts of flowers.*

Rupture-

wort.

The root is composed of a cluster of white fibres: the stalks are round, procumbent, very much branched, and not more than two or three inches in length. The leaves are very small; they stand two at a joint, and are pointed at the end, and of a pale yellowish-green; all along the sides of the stalks stand short and roundish clusters of flowers. They are very minute, and of a yellowish colour.

The plant is a native of England, especially of the western counties. Its leaves are usually smooth, but sometimes it varies from this, and they are hairy. The botanical writers have, from this, divided it into two species, under the names of *Herniaria glabra* and *Herniaria hirsuta*. C. Bauhine calls it, *Polygonum minus*, five *Millegrana* major; Royen and Haller, *Herniaria calycibus bracteis nudis*.

2. *Herniaria fœscolorum glomerulis oblongis.**The Herniaria, with oblong clusters of flowers.*

This is a very beautiful little plant. The root is fibrous; the stalks are procumbent, and spread every way upon the ground; they are round, slender, smooth, jointed, and four or five inches long; the leaves are very small, and of a pale green, broadest in the middle, and pointed at the ends; they stand in pairs. From the axils of these, all along the stalk, there grow clusters of flowers; these are an inch long, and are composed of multitudes of fine white, silvery squamule, set very thick together: among these squamule are numbers of very minute, white flowers.

It is a native of Spain, Italy, and some other parts of Europe. J. Bauhine calls it, *Paronychia Hispanica* Clusii, five *Anthyllis nivea*; C. Bauhine, *Polygonum minus candidum*.

3. *Herniaria*

3. *Herniaria flosculorum glomerulis ovatis.*
The Herniaria, with oval clusters of flowers.

The root is fibrous; the stalks are procumbent, round, smooth, and eight inches long. The leaves stand in pairs, and are a third of an inch long, and a quarter of an inch broad, pointed at the ends, and of a pale green colour. The clusters of flowers are short and oval, and not very compact: the flowers are white.

It is a native of Spain and Italy. Tournefort calls it, *Paronychia Hispanica supina alpine-folia capitulis minus compactis.*

The other species of *Herniaria* are, 1. The narrow-leaved, erect *Herniaria*. 2. The broad-leaved, procumbent *Herniaria*. 3. The shrubby, myrtle-leaved *Herniaria*. 4. The echinated-leaved *Herniaria*.

SALSOLA.

THE calyx is a perianthium, composed of five oval, peltato-obtusé, permanent leaves: there is no corolla. The stamina are five very short filaments, arising from the leaves of the calyx: the germen is globose: the style is short, and divided into two parts: the stigmata are crooked. The fruit is a globose, unilocular capsule, covered with the cup: the seed is single, large, and spiral, like a snail.

This genus comprehends the *Kali* of Tournefort and others.

1. *Salsola inermis foliis lanceolatis.* Smooth
The lanceolated-leaved Salsola, without prickles. Stalswort.

The root is fibrous; the stalks are round, thick, and succulent, and usually of a purplish colour; toward the tops they are divided into a multitude of branches. The leaves are large toward the bottom, but very small toward the tops, broad at the base, and growing smaller to the point. The flowers are small and greenish; the seeds beautifully contorted, or twisted in a spiral manner.

It is common on the sea-coasts in many parts of Europe, and is cultivated also in many places for making a kind of pot-ash. C. Bauhine calls it, *Kali majus femine cochleato*; J. Bauhine, *Kali vulgare*.

2. *Salsola foliis lineari-lanceolatis pungentibus.*
The Salsola, with lineari-lanceolate, pungent leaves.

The root consists of a cluster of fibres: the stalk is round, thick, succulent, and of a dusky green colour; it grows to eight or ten inches, sometimes more, in length, and is usually very much branched: the leaves stand at small distances; they are an inch in length, narrow, and of a lineari-lanceolate figure, terminating with a sharp spine. The whole leaf, as well as the stalk, is full of juice, and thick, only the spine is dry, and somewhat rigid. The flowers are small and green; they stand in the size of the leaves: the seed is beautifully spiral, the cup prickly.

This is frequent on the coasts of the Mediterranean, and is cultivated in some places for making an Alkali salt. C. Bauhine calls it, *Kali spinosum cochleatum*; Matthioli, *Fragus spinosus*.

The other species are, 1. The procumbent, short-leaved *Salsola*, from which the bariza, or finest pot-ash, is made. 2. The thick, short-leaved *Salsola*. 3. The woody *Salsola*, with membranaceous flowers. 4. The shrubby, tamarisk-leaved *Salsola*. 5. The shrubby, Spanish, broom-leaved *Salsola*. 6. The capillaceous-leaved, shrubby *Salsola*. 7. The trifid-leaved, prickly *Salsola*. 8. The large-flowered, shrubby *Salsola*. 9. The woolly-shrub *Salsola*. 10. The toad-flax-leaved *Salsola*. 11. The prickly, capillaceous-leaved, shrubby *Salsola*.

GOMPHRENA.

THE calyx is a perianthium, formed of three leaves, and of a compressed figure; two of the leaves are navicular, carinated on the outside, and have their interior edges connivent; the third is small and locumbent; sideways they are all coloured and

and permanent. The corolla is divided into five parts, and erect; the petals are subulated and permanent: the nectarium is a cylindric tube, of the length of the corolla, divided into five short, patulous segments at the mouth: the stamina are five scarce, visible filaments, placed in the mouth of the nectarium; the anthers cover the mouth of it: the germen is oval with a point; the styles are two and small: the stigmata are simple, and of the length of the stamina: the fruit is a thin, roundish crust, with one cell, containing a single, large, roundish seed, with an oblique end.

This genus comprehends the *Amaranthoides* of Tournefort and others.

1. *Gomphrena caule erecto, foliis ovato-lanceolatis, capitulis solitariis, pedunculis diphyllis.*

The erect, ovato-lanceolate-leaved *Gomphrena*, with single heads on two-leaved peduncles.

Purple everlasting flower.

The root consists of a cluster of white fibres: the stalk is round, hairy, erect, rigid, and branched. It grows to two feet high; the joints are protuberant, and two inches distant: the leaves stand on short pedicles; they are two inches long, an inch and a quarter broad, and pointed at the ends, of a pale greyish-green and hoary. On the tops of the branches stand the heads of flowers; they are roundish, of the bigness of a nutmeg, and of a beautiful purple colour, sometimes white: the pedicles have two leaves on them usually, sometimes four: the heads are composed of a multitude of loose squamule.

The plant is a native of both the East and West Indies; we have it in our gardens. Herman calls it, *Amaranthoides Indicum foliis ocymastri capitulis purpureis*.

2. *Gomphrena caulibus procumbentibus, foliis lineari-lanceolatis.*

The procumbent *Gomphrena*, with lineari-lanceolate leaves.

The root is fibrous: the stalk grows to eight or ten inches long; it lies on the ground, and is much branched: the leaves are half an inch long, very narrow, and pointed at the ends. The heads are small, and of a beautiful silvery white.

It is a native of America, and is found about the sea-coasts. Plumier calls it, *Amaranthoides maritima repens*.

CHENOPODIUM.

THE calyx is a perianthium, formed of five oval, hollow leaves, with membranaceous edges; the whole hollow and permanent: there is no corolla. The stamina are five subulated filaments, placed opposite to the leaves of the cup, and of the same length with them: the anthers are roundish and didymous; the germen is orbiculate; the style is short, and divided into two parts; the stigmata are obtuse: there is no pericarpium. The cup becomes shut, of a pentagonal figure, with five compressed angles, and is deciduous: the seed is single, orbicular, and depressed: the style is, in some species, divided into three parts; but the shape of the cup, containing the seed, distinguishes it from all other genera.

1. *Chenopodium foliis triangulari-sagittatis integerrimis.*

The triangular, sagittated-leaved *Chenopodium*.

English Mercury.

The root is large, oblong, yellowish, and furnished with a number of fibres. The stalks are thick, hollow, striated, and of a pale green colour, purplish toward the base; they are, in part, procumbent; in part, obliquely erect: the leaves are three inches long, and two broad at the base; triangular, and sagittated; of a pale green, and covered in part with a quantity of loose, greyish globules, fast to the touch: the top of the stalks terminate in long spikes, of little yellowish-green flowers, very thick set together.

The plant is common with us in uncultivated places. C. Bauhine calls it, *Lapathum nuctuosum*; J. Bauhine, *Bonus Henricus*. The tops of it are eaten, boiled; and a decoction of the leaves used in emollient clysters.

2. *Chenopodium foliis cordato-triangularibus obtusiusculis, dentatis, racemis erectis compositis.*

The triangular, cordated-leaved *Chenopodium*, with erect, compound clusters of flowers.

Goose-foot.

The root is long, thick, and woody; the stalk is thick, striated, and three feet high: the leaves are three inches long, triangular, but somewhat cordated at the base, and of a bright green colour: the clusters of flowers are large, and composed of shorter clusters; they are of a green colour, with a mixture of yellowness, and stand at the top, and along the sides of the plant.

It is common with us on dunghills. C. Bauhine calls it, *Atroplex sylvestris latifolia*.

3. *Chenopodium foliis rhombico-ovatis integerrimis.*

The rhombes-oval-leaved *Chenopodium*.

Stinking Orach.

The root is slender, oblong, and woody; the radical leaves are three quarters of an inch long, and more than half an inch broad; they stand on long pedicles. The stalks are partly procumbent, partly obliquely erect; they are round, striated, and a foot long: the leaves stand alternately on them, and are like the radical ones, but shorter and smaller: the flowers stand in short and thick tufts, all down the sides of the main stalk, on short branches. The whole plant is of a whitish colour, and covered with loose, dusty globules; it's smell is very offensive.

It is common with us about dunghills. Tournefort calls it, *Chenopodium fetidum*; Ray, *Blitum fetidum vulvaria dictum*.

The other species of *Chenopodium* are, 1. The triangular, dentated, thick-clustered *Chenopodium*. 2. The purplish-clustered, foliote-clustered *Chenopodium*. 3. The naked-clustered, triangular-leaved *Chenopodium*. 4. The sinuated, whitish-leaved *Chenopodium*. 5. The stramonium-leaved *Chenopodium*. 6. The narrow-leaved, lacinated *Chenopodium*. 7. The many-seeded *Chenopodium*. 8. The subulated-leaved *Chenopodium*, called white *Glosswort*, and *Kali minus album*.

B E T A.

THE calyx is a hollow, permanent perianthium, formed of five ovato-oblong, obtuse leaves: there is no corolla. The stamina are five subulated filaments, of the length of the leaves of the cup, and placed opposite to them; the anthers are roundish: the germen is placed below the receptacle; the styles are two, very short and erect; the stigmata are acute: the fruit is a capsule, placed within the cup at the base; it contains only one cell, and is deciduous: the seed is single, kidney-shaped, compressed, and surrounded every way by the cup.

Of this genus there is only one species; but this, from it's varying in the colour of the stalks, leaves, &c. from a pale whitish green to a blood-red, and in other particulars, has been described as different species, under the names of *Beta alba* and *Beta rubra*, &c.

B E T A.

Beet.

The root is long and thick; often an inch and half in diameter, and more than a foot in length: the radical leaves are eight inches long, and five broad; of a pale green, a whitish, or a blood-red colour: the stalk is very thick, roundish, striated, whitish or reddish, and four feet high: the leaves stand alternately on long pedicles on it; they are like those of the root, but smaller, and very thick and fleshy: the flowers stand on the tops of the stalks, and on short branches rising from the side of the leaves. They are small, and naturally of a greenish white. Culture makes a vast variety in this plant; so that Tournefort has described no less than ten varieties of it, under the name of so many species.

It is a native of the sea-coasts of many parts of Europe, and, in this it's wild state, is described, as a distinct species, under the name of *Beta sylvestris maritima*, when cultivated C. Bauhine calls it, *Beta rubra*, and *Beta alba*. The variations culture makes in it are in size, and in the roundness or flatness of the stalk, and in the variation of the leaves, stalks, or ribs of the leaves, into red and yellow.

ULMUS.

ULMUS.

THE calyx is a turbinated, rugose perianthium, composed of a single leaf, divided into five segments at the edge, erect, coloured on the inside, and permanent: there is no corolla. The stamina are five subulated filaments, twice as long as the cup: the anthers are erect, short, and falcated four ways: the germen is orbicular and erect; the styles are two, shorter than the stamina, and reflex; the stigmata are hoary. The fruit is a large, oval, compressed, drupe: the seed is single, roundish, and lightly compressed.

1. *Ulmus fructu membranaceo.*
The membranaceous-fruited Elm.

The common Elm.

This is a large, tall and ramose tree: the bark is rough, and full of cracks on the trunk, but on the young shoots smooth, and of a pale brown colour, and the under bark is mucilaginous and tough: the leaves are two inches long, nearly as much in breadth, serrated round the edges, and pointed at the ends: the flowers appear before the leaves; they are small and purplish: the fruit is a large, oval-pointed, membranaceous drupe: the seed sweet to the taste.

It is common in our hedges. C. Bauhine calls it, *Ulmus campestris* at Theophrasti; Dodonæus, *Ulmus*. It's inner bark, boiled in water, makes an excellent mucilage, used in sore throats, and in fevers.

The other species of Elm are, 1. The narrow-leaved Elm. 2. The broad, rough-leaved Elm; 3. and the broad and smooth-leaved Elm.

BOSEA.

THE calyx is a perianthium, composed of five hollowed, lanceolated, erect leaves, thinner at the edges than elsewhere; there is no corolla: the stamina are five subulated filaments, a little longer than the cup; the anthers are simple; the germen is ovato-oblong, and cuspidated: the styles are two, and patulous; the stigmata are simple: the fruit is a globose, unilocular berry; the seed is single and acuminate. This genus comes very near the Celtis and the Ulmus.

Of this there is but one known species. It is described by Ludwig, under the name of *Yerva Mora*. These characters distinguish it sufficiently.

CAESSA.

THE calyx is a perianthium, composed of five oblong, hollow leaves. The corolla consists of a single petal; the tube is short, and the mouth expanded: the stamina are five subulated filaments, placed on the upper part of the tube of the corolla; the anthers are simple: the germen is oval; the styles are two, short and expanded: the stigmata are thick; the fruit is a bivalve capsule; the seeds small.

There is but one known species of this genus, which is sufficiently distinguished by these characters.

Class the Fifth Order the Second.

Division the Third.

Pentandria Digynia, with many seeds succeeding each flower.

NAMA.

THE calyx is a permanent perianthium, composed of five oblong leaves: the corolla consists of five petals: the stamina are five short and slender filaments, of a subulated form; the anthers are tumid and large; the germen is of an oval figure: the styles are two; they are short and slender: the fruit is a capsule of an oval figure, formed of two valves, and containing only a single cell; the seeds are numerous, small, and roundish.

Of this genus there is but one known species, which needs no further description.

MITREOLA.

MITREOLA.

THE calyx is a very small, permanent perianthium, formed of one leaf, and divided into five segments: the corolla consists of a single, campanulated petal, divided at the extremity into five erect, acute segments: the stamina are five extremely short filaments, placed in the tube of the corolla; the anthers are simple. The germen is divided into two parts, and oval: the styles are two; they are erect, and of the length of the stamina; the stigmata are obtuse: the fruit is an erect, simple capsule, divided into two parts, containing two cells, and of an ovated, acute figure, and splits between the lobes: the seeds are numerous, small, and roundish.

It is an Americano, described by Houston under the name of *Mitra*.

HEUCHERA.

THE calyx is a narrow, rounded perianthium, composed of a single leaf, divided at the edge into five obtuse segments: the corolla consists of five petals, inserted into the edge of the cup; they are of the length of the cup, and of an ovato-linear figure: the stamina are five erect, subulated filaments, of twice the length of the cup; the anthers are roundish: the germen is roundish and semi-bisid: the styles are two, strait, and of the length of the stamina; the stigmata are obtuse. The fruit is an ovato-acuminated capsule, semi-bisid, terminating in two reflex points, and containing two cells: the seeds are numerous and small.

Heuchera foliis palmatis sinuatis.

The Heuchera, with palmated and sinuated leaves.

The root is oblong, whitish within, brown on the surface, and furnished with many fibres; the radical leaves are affixed to long pedicles; they are very large, palmated, sinuated, and indented round the edges; of a bright green on the upper side, but paler underneath. The stalk grows but to five or six inches high: it has sometimes no leaves, sometimes one or two, like the radical ones, but much smaller; from the middle to the top of the stalk stand the flowers; they are of a dusky blackish purple, with an admixture of greenish, and appear hairy. They stand on long pedicles, and form a kind of lax spike.

It is a native of America, and of some parts of Europe; it grows in damp places. Boerhaave calls it, *Mitella Americana flore squallide purpureo villosa*; Plukenet, *Coriaria Americana flore purpureo*.

GENTIANA.

THE calyx is a perianthium, formed of a single leaf, divided into five oblong, acute, permanent segments: the corolla consists of a single petal, tubulated, and imperforated at the base, and at the edge divided into five segments, various in figure. The stamina are five subulated filaments, shorter than the corolla; the anthers are simple: the germen is oblong, cylindric, and of the length of the stamina; there are no styles, but the stigmata are two, and oval. The fruit is an oblong, cylindric, acuminate capsule, slightly bisid at the top, formed of two valves, and containing only one cell: the seeds are numerous and small; the receptacles are two, and grow to the two valves of the capsule.

This genus comprehends the *Gentiana* and *Centaureum* minus of authors. The figure of the fruit is constant; the flower varies greatly in the several species, both in the number, and figure of its parts. One species excludes a fifth, another adds three fifths to the parts; in some the neck of the corolla is open, in others it is closed up with filaments; in some the laciniae are ciliated, in others the limb is only plicated, in others stellated; in some campanulated, and in others infundibuliform: when it is stellated, there are often little segments placed between the others.

1. *Gentiana floribus lateralibus confertis, pedunculatis, corollis rotatis.*

Gentian.

The Gentiana, with lateral, clustered, pedunculated, and rotated flowers.

This is the species of Gentian, the root of which is used in medicine. The root is of a yellowish brown, long, thick, and divided into several parts toward the bottom: the radical leaves stand in clusters; they are six or eight inches long, and more than half their length in breadth, of a pale green, very rigid and nervous, the nerves running longitudinally, broadest in the middle, and pointed at the end. The stalk is smooth and thick; it grows to two or three feet high: the leaves stand in pairs at the joints; they are like the radical ones, but smaller, smooth, glossy, and have each either three or five ribs running longitudinally. The flowers stand in clusters, verticillately as it were, surrounding the stalks; they are moderately large, and of a pale yellow.

The plant is a native of Germany and Sweden. C. Bauhine calls it, *Gentiana major lutea*; J. Bauhine, *Gentiana major hellebori albi folio*. It's root is an excellent stomachic in tincture or infusion.

2. *Gentiana foliis linearibus, floribus terminatricibus raris, corollis erectis plicatis,*

Calathian

The linear-leaved Gentian, with terminatory, plicated flowers. **Violet.**

The root is oblong, slender, yellow, and bitter: the stalk is round, slender, and grows to fifteen inches, or more, in height: the leaves are often two inches long, very narrow, and placed in pairs on the stalks; they are of a pale green, and have each three longitudinal ribs. The flowers stand at the top of the stalk, and of the branches, when there are any; they are very large, often an inch, or more, in length, and of a beautiful blue colour.

The plant is a native of England, but not common. I found it, two years since, in a marsh near Rochester. C. Bauhine calls it, *Gentiana palustris angustifolia*; others, *Pneumonanthe*.

3. *Gentiana corollis hypocrateri-formibus, faucibus barbatis.*

Autumnal dwarf

The Gentiana, with hypocrateri-form flowers, barbed at the mouth. **Gentian.**

The root is oblong, slender, and yellowish; the radical leaves are an inch long, and more than half an inch broad; they stand thirty or forty together in a circular manner: the stalk is firm, smooth, and a foot high: the leaves stand two at a joint; they have no pedicles, and are like the radical ones, but shorter, and have each three longitudinal ribs; they terminate in a point. The flowers stand on the top of the stalk, and on short branches growing from the axils of all the leaves; they are moderately large, and of a beautiful blue colour.

It is common in dry, hilly places. C. Bauhine calls it, *Gentiana autumnalis ramosa*; Rudbeck, *Gentianella*; Ray, *Gentianella autumnalis elatior foliis centaurei minoris*.

4. *Gentiana foliis lineari-lanceolatis, caule dichotomo, corollis infundibuliformibus quinquifidis.*

Small Cen-

The lineari-lanceolate-leaved Gentian, with dichotomous stalks, and funnel-shaped flowers. **taurp.**

The root is long, slender, oblique, and woody; the radical leaves are an inch long; and not half an inch broad; the stalk rises single, but usually divaricates afterwards into two, and these often into two again. The height of the plant is about ten inches: the leaves stand in pairs, and are like those of the root, but narrower: the flow-

ers stand at the tops of the stalk in clusters, and are long, narrow, and of a pale red. The whole plant is very bitter to the taste.

It is common in dry pastures. C. Bauhine and others calls it, *Centaurium minus*. It is an excellent stomachic in infusion, and is a common ingredient in bitters.

The other principal species of *Gentian* are, 1. The narrow-leaved *Gentian*, with a blue and yellow flower. 2. The great, purple *Gentian*. 3. The swallow-wort-leaved *Gentian*. 4. The great-flowered, Alpine *Gentian*. 5. The little spring *Gentian*. 6. The narrow-leaved, spring *Gentian*. 7. The cruciate-leaved *Gentian*. 8. The broad, short-flowered *Gentian*. 9. The *Gentian* called small *Centaury*, with very narrow, linear leaves. 10. The short, acute-leaved *Gentian*. 11. The cluster-flowered, toad-flax-leaved *Gentian*. 12. The red, spiked-flowered *Gentian*. 13. The great, red-flowered, sweet *Gentian*, of the Cape of Good Hope. 14. The perfoliate, yellow-flowered *Gentian*. 15. The little, trifoliate, yellow *Gentian*. 16. The narrow and rigid-leaved, little, yellow *Gentian*.

SWERTIA.

THE calyx is a plane, permanent perianthium, formed of one leaf, divided into five lanceolated segments. The corolla consists of a single petal: there is no tube; the limb is plane, and divided into five lanceolated segments, larger than the cup, and cohering only at their ungues. The nectaria are ten; they are two points at the bottom of every segment, depressed, and ciliated with fine hairs: the stamina are five, erecto-patent, subulated filaments, shorter than the corolla; the antheræ are incumbent: the germen is of an ovato-oblong figure; the style is not visible: the stigma is simple: the fruit is a cylindric capsule, pointed at each end, formed of two valves, and containing only one cell: the seeds are numerous and small. These characters sufficiently distinguish it, without a farther description.

Class the Fifth. Order the Second.

Division the Fourth.

Pentandria Digynia, with two naked seeds after every flower, and with simple umbels.

PHYL LIS.

THE calyx is an extremely minute perianthium, composed of two leaves, and fixed on the germen: the corolla consists of five lanceolate, obtuse petals, turned backwards, and just joining at their bases: the stamina are five capillary, flaccid filaments, shorter than the corolla: the antheræ are simple and oblong: the germen is placed under the receptacle; there is no style: the stigmata are two, pubescent, reflex, and subulated: the fruit is of a turbinato-oblong, obtuse, angular figure, composed of two parallel seeds, broadest at top, convex and angular on one side, and plain on the other.

This genus comprehends the *Beupleuroides* of Boerhaave; the *Simpla Nobla* of Plukenet. The characters are sufficient, without a farther description.

PANAX.

THE umbel of the *Panax* is simple, equal, and thick; the involucrem is very small, formed of a number of leaves, subulated and permanent. The perianthium of each flower is very small, divided into five segments, and permanent: the general corolla is uniform; the peculiar corolla consists of five oblong, crooked, equal petals: the stamina are five very short filaments; the antheræ are simple; the germen is roundish, and placed below the perianthium: the styles are two, and small; the stigmata are simple: the fruit is a roundish berry, having one cell, and is coronated with the cup: the seeds are two, and of a kidney-like shape.

This genus comprehends the famous *Ginseng*, the *Araliastrum*, and *Aureliana* of authors.

The

The similarity of the names Ginseng and Ninzin, or Ninsin, and the similar virtues of the two roots, have led people to imagine they were the same, but that very erroneously; they are not even of the same genus. The Ginseng is a *Panax*; the Ninzin a *Saim*, hereafter to be described in its place.

Panax foliis quinis.

The five-leaved Panax.

Ginseng.

The root is two or three inches long, and of the thickness of a man's little finger, somewhat rugose on the surface, and usually divided into two, sometimes into more, parts at the base. It is of a brownish colour on the surface, and yellowish within; its smell is aromatic and agreeable; its taste acrid, aromatic, and bitterish: at the head of the root stand a series of nodules, formed by the remains of the stalks of the years before, and by these the age of the root is discovered. The stalk is single, smooth, of a reddish colour, and a foot high. From the top of this there grow three or four oblong pedicles, furrowed longitudinally, half way of their length, and standing horizontally, so as to form a kind of umbel. At the extremity of each of these stand five leaves, unequal in size, and growing together, with petioles of an unequal length; they are thin, oblong, of an ovato-acuminated figure, and deeply serrated round the edges; they are of a pale yellowish-green colour, and full of fine veins: from the top of the main stalk, and in the center of the pedicles supporting the leaves, there rises a peduncle naked, slender, and five or six inches long; at the top of this stands a corymbose umbel, formed of flowers standing on peduncles, very slender, and an inch in length; every flower has its separate peduncle, and they are small, and their petals oblong. The berry, which succeeds each of these flowers, is striated on the surface.

It is a native of China and Tartary; it grows in shady places, in forests, &c. between thirty-nine and forty-seven degrees North; it has lately been discovered also about the forty-seventh degree in North America. *Satrasin* calls it, *Araliastrum quinquefolium folio*. The Tartars and Chinese gather the roots in spring and autumn, with great care, and dry them in a particular manner with a great many cautions; when dried, it sells with them for three times its weight in silver, and is esteemed an universal medicine, a remedy for all diseases; it's most favourite quality, however, is that of a provocative to venery, which they imagine it possesses in an amazing degree. With us it has been sold at a much greater price than there; and such cheats have been the Chinese, who sold it, that, when cut, every root of it has often been found loaded with a long piece of lead, carefully let into it, which has given it three times its real weight.

ERYNGIUM.

THE common receptacle is conic, and there are paleæ which separate the sessile floscules. The involucre of the receptacle is formed of several leaves, plane, and exceeding the floscules in height: the proper perianthium is formed of five leaves, erect, acute, placed upon the germen, and exceeding the corolla in length: the corolla is, in the whole, roundish and uniform; the single flower is formed of five oblong petals, with their extremities turned back to their base. The stamina are five strait, capillary filaments, taller than the corolla: the antheræ are oblong; the germen is hairy, and stands under the proper perianthium: the styles are two, filiform, strait, and of the length of the stamina; the stigmata are simple: the pericarpium is an oval fruit, divisible into two parts; and the seeds oblong and cylindric: in some the seeds are in time freed from the crust of the pericarpium, in others not.

1. *Eryngium foliis radicalibus subrotundis plicatis spinosis, floribus pedunculatis.*

The Eryngium, with the radical leaves, roundish, plicated, and prickly, and the flowers on peduncles.

Sta
Eryngo.

The root is very long, of the thickness of a small quill, and dispersed every way in the earth: the radical leaves stand on long pedicles; they are six or eight inches long, and

and three or four broad, sinuated at the edges, but not very deeply, and folded, as it were, very prickly at the edges, and of a pale whitish blue green. The stalk is round, thick, tough, very much branched, and of a bluish-green; the leaves on it are like the radical ones, but small: the flowers stand at the tops of the branches, in round clusters, surrounded by prickly leaves; they are small and whitish.

It is common on our sea-coasts. C. Bauhine calls it, *Eryngium maritimum*.

2. *Eryngium foliis spinosis laciniatis, caulibus ramosissimis.*

The prickly, lacinated-leaved *Eryngium*, with very much branched stalks.

Common
Eryngo.

The root is a foot long, and as thick as a man's finger; the radical leaves are six or eight inches long, and deeply lacinated, even down almost to the middle rib, in many places, and divided, as it were, into so many lobes; they are serrated at the edges, and the denticles all terminate in very sharp prickles: the stalk is striated round, and tough; it grows to two feet high, and spreads so much into branches every way, that the whole plant frequently assumes a globular figure. The leaves stand alternately; they resemble the radical ones, and are of a bluish-green colour: the flowers stand in round clusters at the tops of the stalks, and are small and white.

It is frequent in corn-fields in most part of Europe; but in England we have it only in three or four places, as in Northamptonshire and Devonshire. C. Bauhine calls it, *Eryngium vulgare*; others, *Eryngium campestre*. Its root is a decostruent and pectoral; it is candied with sugar, and dried for use in decoctions, &c.

3. *Eryngium foliis radicalibus ovalibus planis crenatis, capitulis pedunculatis.*

The oval, plane-leaved *Eryngium*, with pedunculated heads.

Small
Eryngo.

The root is very long; the radical leaves are two inches long, an inch broad, rounded at the end, and narrower to the base; the stalk grows to seven inches high, and is very ramose: the flowers are small and white.

It is a native of Russia. C. Bauhine calls it, *Eryngium planum minus*.

The other species to be mentioned are, 1. The teal-headed, Alpine *Eryngium*. 2. The blue, mountain *Eryngium*. 3. The dwarf, spinose, sinuated *Eryngium*. 4. The pyllium-leaved *Eryngium*. 5. The stinking, American *Eryngium*. 6. The corniculate, Portugal *Eryngium*. 7. The mukisid-leaved, Cretic *Eryngium*. 8. The little-headed, Cretic *Eryngium*. 9. The stellate *Eryngium*, with deeply divided, pale green leaves. 10. The tall, broader-leaved, stellate-headed *Eryngium*.

HYDROCOTYLE.

THE general umbel is composed of four sessile flowers, and a single umbel in the center; the partial umbel consists of four sessile floscules. The general involucre is composed of four leaves, and the partial involucre of four leaves also; there is scarce any visible perianthium: the universal corolla is uniform in figure, though not in situation; the single corolla is formed of five ovato-acute, patent petals: the stamina are five subulated filaments, shorter than the corolla: the anthers are very small; the germen is erect, compressed, and orbiculated, and stands under the proper receptacle: the styles are two, subulated and very short; the stigmata are simple: the fruit is orbicular, erect, and is composed of two compressed and semi-orbicular seeds.

1. *Hydrocotyle foliis peltatis orbiculatis undique emarginatis.*

The orbiculated, peltated, and every way emarginated-leaved *Hydrocotyle*.

Barth Pen-
nywort.

The root is oblong, slender, and creeping; the stalks are procumbent, and take root at every joint, sending down clusters of long fibres; they never rise at all from the

the earth; they are round and jointed; at an inch, or more, distance from every joint, there rise three or four pedicles, of three inches, or more, in height; at the top of each stands a single leaf, round and sinuated, or emarginated all round the edges; it is about an inch in diameter, of a pale green colour, and the pedicle is inserted into the center of it. From the same stalks, near the base of the pedicles of the leaves, there rise other pedicles, of half an inch long, which sustain the flowers, these are of a pale reddish colour, and very small.

The plant is common with us in damp places, and is suspected of hurting sheep that eat of it, whence it's English name *White Rot*. J. Bauhine calls it, *Cotyledon aquatica*.

2. *Hydrocotyle foliis orbiculatis integerrimis, floribus minimis.*

The orbiculate, whole-leaved Hydrocotyle, with very small flowers.

The stalks creep on the ground, and take root at every joint; they are round, purple, and of two feet in length: the leaves are perfectly round, two inches and a half in diameter, even at the edges, of a deep green, and stand on pedicles of about two inches high, which are inserted into their center. The flowers are smaller than in the former species, and of a snow white.

It is frequent in the Savannahs of North America. Plumier calls it, *Hydrocotyle folio umbilicato maximo*.

The other species are, 1. The Asarum-leaved Hydrocotyle, called *Asarina minor*. 2. The nymphaea-leaved Hydrocotyle.

Class the Fifth. Order the First.

Division the Fifth.

Pentandria Digynia, with two naked seeds, and with an universal and a partial umbel.

SANICULA.

THE general umbel is formed of a very few radii, usually but four; the partial umbel of very numerous and thick-set ones. The general involucre is diminished, and placed outwardly; the partial one surrounds the whole, and is shorter than the floscules: the perianthium is scarce visible; the general corolla is uniform; the single corolla consists of five compressed, inflex, bifid petals: the stamina are five simple, erect filaments, twice as long as the floscules: the antheræ are roundish; the germen is rough, and placed under the proper receptacle: the styles are two, subulate and reflex; the stigmata are acute: the fruit is oval and acute, rough and divisible into two parts: the seeds are two, convex and rough on one side, and smooth and plane on the other.

1. *Sanicula foliis radicalibus simplicibus, flosculis omnibus sessilibus.*

The Sanicula, with the radical leaves simple, and all the flowers sessile. Sanicle.

The root is composed of a number of thick fibres, black on the outside, and white within; the radical leaves stand on long pedicles, and are of a roundish figure, but sinuated in five places, and indented all round the edges; they are of a dark green, of a glossy surface, and thick. The stalk is round, smooth, and a foot high; it has often but one leaf on it, sometimes two, and at it's top has a small umbel; the flowers are moderately large and white, or of a pale flesh colour.

It is common in our woods. C. Bauhine calls it, *Sanicula officinarum*; J. Bauhine, *Sanicula five diapsisa*. It is esteemed an excellent vulnerary.

2. *Sanicula foliis septilobatis inequalibus, flosculis masculis pedunculatis.*
The Sanicle, with unequal septilobate leaves, and with the male flowers placed on pedicles.

The root is black, short, and furnished with a multitude of fibres: the radical leaves are placed on long, shining pedicles; they are an inch, or more, in breadth, of a figure approaching, in general, to roundness, but divided into seven lobes, by so many deep sinuations, and these lobes serrated at the edges. The stalk is round, of a purplish brown, and glossy; it divides toward the top into two parts, and these again into two others: the leaves stand two together; at the divisions of the stalks they are like the radical ones, but divided only into three lobes: the umbels are small, and consist partly of hermaphrodite flowers, partly of such as are only male; the former are sessile, the others have pedicles.

It is a native of Virginia. Ray calls it, *Sanicula caule et ramis dichotomis echinis minimis in eodem pediculo*; Groenonius and Van Royen, *Sanicula flosculis masculis pedunculatis hermaphroditis sessilibus*.

ASTRANTIA.

THE general umbel is composed of a very few rays, usually only of three; the partial umbel of very numerous ones: the general involucre is formed of leaves duplicate to the rays; the partial one of about twenty leaves, of a lanceolated figure, patent, equal, coloured, and longer than the umbels: the proper perianthium is divided into five segments, acute, erect, and permanent: the universal corolla is uniform; the single flower is composed of five bifid petals: the stamina are five simple filaments, of the length of the floscule; the antheræ are simple: the germen is oblong; the styles are two, erect and uniform; the stigmata are simple and patent: the fruit is oval, obtuse, coronated, and striated; it is separable into two parts: the seeds are two, oval and oblong, and covered with the crust of the pericarpium. The marginal flowers of the umbel are only males; the rest are hermaphrodite.

Of this genus there is only one known species.

ASTRANTIA.

Black Masterwort.

The root is short and tuberosus, and is furnished with a multitude of large fibres, black on the outside, and white within. The radical leaves are divided usually into five lobes, which are oblong, broad, pointed at the ends, and serrated round the edges, of a dark green on the upper side, paler underneath, and placed on long pedicles: the stalk is round, striated, and two feet high; the leaves on it stand singly, and are like the radical ones; the flowers stand in roundish clusters at the tops of the stalks, and are small, and of a greenish white: the surrounding leaves of the involucre are often variegated with whitish, greenish, and purplish.

It is a native of Italy and Germany; we have it in gardens. Lobel calls it, *Astrantia nigra*; C. Bauhine, *Helleborus niger saniculæ folio major*. Morison has described a smaller kind, under the name of *Astrantia minor*; and C. Bauhine, under that of *Helleborus saniculæ folio minor*; but, brought into a garden, it grows to the same size, and is wholly the same with the common one. Tournefort has also made another species, from a whiter colour of the flowers. The root is said to be aperient, and good in disorders of the viscera; but it is not in use at this time.

BU P L E U R U M.

THE general umbel is composed of radii, under ten in number; the partial umbel is erecto-patent; there is no general involucre. The partial involucre is composed of five leaves, much longer than the umbel itself; they are of an oval figure, acute and patent: the proper perianthium is scarce visible; the general corolla is uniform; the single flower consists of five inflexo-cordated, small petals: the stamina are five simple filaments; the antheræ are roundish; the germen is placed below the proper receptacle: the styles are two, reflex and small; the stigmata are very little:
the

the fruit is roundish, compressed, striated, and divided into two parts: the seeds are two, of an oval oblong figure, convex and striated on one side, and plane on the other.

The leaves of the plant sometimes stand at the base of the general umbel, in such a manner, that it will be easy for an incurious observer to take them for a general involucre.

1. *Bupleurum foliis ovatis amplexicaulibus, umbellis majusculis.*

The oval-leaved, perfoliate *Bupleurum*, with moderately large umbels.

Thorough-
war.

The root is oblong, slender, whitish, and woody: the stalk rises single, and is round, smooth, hollow, and two feet, or more, in height: the leaves stand singly, at considerable distances; they are of an oval figure, very smooth and glossy, of a bluish-green colour, and surround the stalk in such a manner, that it seems to perforate or grow through the middle of their base: toward the top the stalk divides into several ramifications, and at the tops of these, and of the branches propagated from them, stand moderately large umbels, an inch and a half in diameter at the top. The flowers are yellowish and small, the seeds large and blackish.

The plant is common in the west of England, in corn-fields. C. Bauhine calls it, *Perfoliata arvensis*.

2. *Bupleurum foliis angustissimis, umbellis minimis.*

The *Bupleurum*, with very narrow leaves, and very small umbels.

The root is oblong, slender, and woody; the radical leaves are six inches long, not more than a sixth of an inch broad, and very much resemble those of the grasses: the stalk is round, green, branched, smooth, jointed, and grows to a foot and a half high; the leaves stand two together, at the divisions of the stalks, and are two or three inches long, very narrow, and grassy, and of a strong green: toward the top the stalk divides into several branches, and these, at their tops, have very small umbels, scarce distinguishable as such: the flowers are yellowish, and very minute.

It is a native of England; I have found it about Thorndon in Essex in abundance. Ray calls it, *Bupleurum minimum*; C. Bauhine, *Bupleurum angustissimum folio*; J. Bauhine, *Auricula leporis minima*.

The other species to be mentioned are, 1. The broad, rigid-leaved *Bupleurum*. 2. The narrow-leaved, small, thick-stalked *Bupleurum*. 3. The long-leaved, perfoliate *Bupleurum*. 4. The small-flowered, Alpine *Bupleurum*. 5. The grassy-leaved, Pyrenean *Bupleurum*. 6. The willow-leaved and shrubby *Bupleurum*. 7. The grassy-leaved, shrubby *Bupleurum*. 8. The long-seeded, oriental *Bupleurum*, with narrow leaves.

ECHINOPHORA.

THE general umbel is multiple and unequal; the partial one is also multiple and unequal: the general involucre is of a turbinated figure; it is formed of a single leaf, and serves as a vagina for the seeds.

This is the essential character of the genus, and is so striking and obvious a one, that no farther description is necessary: the characters in general, excepting for this peculiar circumstance of the general involucre, agree with those of the *tordylium*.

TORDYLIUM.

THE general umbel is unequal and multiple: the partial umbel is also unequal, multiple, very short, and plane: the general involucre is composed of narrow leaves, often of the length of the umbel: the partial involucre is dimidiated, and is longer than the umbellule: the general corolla is difform and radiated: the single flowers of the disk are composed of five equal, inflexo-cordated petals: the single flowers of the radius are like these, but that the outer petal is larger than the rest, and is divided into

into two parts: the stamina are five capillary filaments in all: the antheræ are simple: the germen in all is roundish, and placed under the proper receptacle: the styles are two, and small: the stigmata are obtuse. The fruit is roundish, compressed, and surrounded longitudinally with denticles; it is separable into two parts: the seeds are two; they are roundish, almost plane, but with an elevated, denticulated edge.

1. *Tordylium umbella conferta, foliis ovato-lanceolatis pinnatifidis.*

The *Tordylium*, with clustered umbels, and with pinnatifid, Hedge
Parsley.
ovato-lanceolate leaves.

The root is oblong, slender, and white; the radical leaves stand on long pedicles, and are five or six inches long, and formed of a number of lobes, resembling pinnae, disposed on the two sides of a middle rib, which is terminated at the extremity by a lobe of the same kind, only longer; they are all serrated round the edges, rough to the touch, and of a dusky green colour. The stalk is round, striated, hairy, and rough to the touch; the leaves on it are like the radical ones, but smaller; it grows to three feet high, and, toward the top, divides into a number of branches, on the tops of which stand moderately large umbels of flowers, of a reddish colour.

It is common by our way-sides and in hedges. C. Bauhine calls it, *Caucalis femine aspero flosculis rubentibus*; others, *Caucalis minor flore rubente*.

2. *Tordylium involucris umbella longioribus.*

The *Tordylium*, with the involucre longer than the umbels.

The root is oblong, thick, and woody. The radical leaves are large, and composed of numbers of oblong and broad pinnae, set on the sides of the middle ribs, with small lobes at their extremities; they are of a yellowish-green colour, and smooth surface. The stalk is round, striated, jointed, and has leaves like the radical ones, but smaller, and placed singly at every joint. The top of the stalk is divided into six or eight branches, and, on the tops of these, stand umbels of a moderate size, composed of flowers of a white, or pale reddish, colour. The seeds are large and long.

It is a native of Syria, but we have it in some of our gardens. C. Bauhine calls it, *Gingidium foliis pastinacæ latifolæ*; J. Bauhine, *Caucalis Syriaca cum maximo femine*.

3. *Tordylium involucris partialibus longitudine petalorum, foliis ovatis laciniatis.*

The oval, lacinated-leaved *Tordylium*, with the partial involucre of the length of the petals.

Candy Hart-
wort.

The root is long, slender, and white. The radical leaves stand on pedicles of four or five inches long; they are composed of several pairs of pinnae, of an oval figure, deeply serrated at the edges, of a pale green colour, and somewhat hairy. The stalk is round, striated, and hairy; it grows to about fifteen inches high, and, toward the top, divides into several branches. The leaves stand singly on the stalk, and are like the radical ones, but smaller, and somewhat more hairy, though not much so. The umbels are small, the flowers white, the seed not very hairy.

It is a native of Italy, and other parts of Europe. Dodonæus calls it, *Seseli Creticum*; C. Bauhine, *Seseli Creticum minus*.

The seeds are esteemed a carminative and alexipharmic, but are very little used at present.

CAUCALIS.

THE general umbel is unequal, and formed of a few radii, usually not more than three: the partial umbel is also unequal, but it has more radii, the five outer ones being larger than the rest: the general involucre is composed of as many leaves as there are radii; they are of a lanceolato-acute figure, and have short, oval, lateral membranes: the partial involucre is composed of leaves of the same shape, longer than

than the radii, and usually five in number: the general corolla is difform and radiated: the single flowers of the disk are all males; they are small, and composed of five equal, inflexo-cordate petals; those of the radius are all hermaphrodites, and are composed of five inflexo-cordate, unequal petals, the exterior one being larger than the rest, and bifid; they have all five capillary filaments, with small anthers: the flowers of the radius have the germen oblong, scabrous, and placed below the cup: the styles are two, and subulated: the stigmata are two, patent and obtuse. The fruit is of an ovato-oblong figure, striated longitudinally, and the ridges are beset with little spines: the seeds are two, oblong, convex, and prickly on one side, and plane and smooth on the other.

1. *Caucalis involucri universalis pinnatifida, partialibus indivisis, umbella multifida.*

The Caulis, with the universal involucrium pinnatifid, the partial ones undivided, and with a multifid umbel.

The root is white, oblong, slender, and of an aromatic taste, but esculent. The radical leaves stand on long pedicles, and are very finely divided; they resemble, in some measure, the leaves of the common carrot. The stalk is a foot, or more, high, striated, jointed, and ramose, even from the bottom. The leaves stand singly at the joints, and are like the radical ones; they are smaller, however, and yet the segments are broader. The umbels stand on very long, naked pedicles, and are moderately large; the flowers are larger than in most other umbelliferous plants, and white.

It is common among the corn in most parts of Europe, C. Bauhine calls it, *Caucalis arvensis echinata magno flore.*

2. *Caucalis umbella trifida, umbellulis trifidis, involucri tripbyllis.*
The Caulis, with a trifid umbel, trifid umbellule, and three-leaved involucria.

The root is small, oblong, and white: the radical leaves are finely divided, but the segments somewhat broad, smooth on the upper surface, a little hairy underneath, and placed on short pedicles. The stalk is round, striated, ramose, and smooth: the leaves stand singly on it, and are like the radical ones, only that the segments are broader. The umbels stand on naked, very long pedicles: the involucrium is composed of three large leaves, with a white edge. The seeds are oval, compressed, and of the bigness of a man's nail, and beset with a multitude of rigid, purple spines.

It is a native of many parts of Europe, and grows principally in corn-fields. C. Bauhine calls it, *Caucalis Montpeliciensis echinato magno fructu.*

3. *Caucalis umbellulis sessilibus simplicibus.*
The Caulis, with simple, sessile umbels.

The root is small, oblong, and white: the stalks are round, very rough, procumbent, or oblique, and the leaves divided into a number of segments, rough, and of a dusky green: the umbels stand at the joints, without any pedicles. The flowers are single and white; the seeds small, but very rough and hairy.

It is common under hedges, and in corn-fields. C. Bauhine calls it, *Caucalis nodosa echinato femine*; Rivinus, *Caucalis ad alas florens*.

The other species are, 1. The small-flowered, fine-leaved *Caucalis*. 2. The broad-leaved, red-flowered *Caucalis*. 3. The dwarf, maritime *Caucalis*. 4. The great, downy-leaved *Caucalis*. 5. The spignel-leaved *Caucalis*. 6. The very finely-divided leaved *Caucalis*, with a large, echinated fruit.

ARTEDIA.

THE general umbel is multiple, plane, and patent: the partial umbel is small, but similar: the general involucrium is composed of about ten leaves; they are of an oblong, oval figure, nearly of the length of the umbel, and have three spines, or setæ, at their extremities: the partial involucrium is composed of two or three leaves,

and turns outward: the leaves are linear, pinnated, and longer than the umbellula; the general corolla is difform and radiated: the single flowers of the disk are all males; they consist each of five erect, inflexo-cordate petals: the single flowers of the radius are all hermaphrodites; they consist of the same number of petals, but in these the exterior one is larger than the rest, and divided into two parts: the stamina in all are five capillary filaments: the anthers are simple and roundish: the flowers of the radius have the germen small, and placed under the cup: the styles are two, and reflex: the stigmata are simple. The fruit is roundish, compressed, divisible into two parts, and siliaceo-squammosa at the edge: the seeds are two, oblong, and elegantly ridged at the edges, with round squammæ.

Of this genus there is only one known species.

ARTEDIA.

The root is small, oblong, and white: the radical leaves are finely divided, and of a dark green colour; they stand on moderately long pedicles, and somewhat resemble the lower leaves of dill; they are of a bitter and disagreeable taste. The stalks are round, striated, and two feet high: the leaves stand singly on them, and are like the radical ones, only smaller. The umbels are small; the flowers white, with a tinge of bluish. The seeds are large and beautiful, and stand very close in the head.

It is a native of the eastern parts of the world; Rawwolf found it about Mount Libanon, and elsewhere; he calls it *Gingidium*; C. Bauhine, *Gingidium folio forniculi*; and Tournefort, *Thapsia orientalis anethi folio semine eleganter crenata*.

DAUCUS.

THE general umbel is multiple, plane when in flower, but, when in seed, concave and connivent: the partial umbel is multiple, and like it: the general involucrem is of the length of the umbel, and is composed of several leaves; these are linear and pinnatifid: the partial involucrem is more simple, and of the length of the umbellula: the proper perianthium is scarce visible: the general corolla is unequal: the single flowers consist each of five inflexo-cordate petals, the exterior ones larger than the rest: the stamina are five capillary filaments: the anthers are simple: the germen is placed under the proper receptacle, and is small: the styles are two, reflex: the stigmata are obtuse. The fruit is of an oval figure, every way covered with rigid hairs, and is divisible into two parts: the seeds are two, of a suboval figure, convex and hairy on one side, smooth and plane on the other.

Of this genus there is only one known species.

DAUCUS.

Carrots.

The root is oblong, thick, and of an agreeable taste: the radical leaves stand on long pedicles; they are very finely divided, large, and of a dusky green colour, and hairy on the under side. The stalk is round, striated, and jointed; it grows to three feet high, and is, toward the top, divided into many branches: the leaves stand singly at the joints, and are like the radical ones, only smaller. The umbels stand at the tops of all the branches; they are moderately large, very thick set with flowers, and have a purplish tinge before they open, but, when opened, they are white. The umbel of the seeds is large and hollow; the seeds themselves beautifully armed with pale, whitish prickles.

It grows with us by way-fides very common. Clavius calls it, *Daucus vulgaris*, C. Bauhine, *Pastinaca tenuifolia feminibus hispida*; Van Royen, Linnæus, and Halter, *Daucus feminibus hispida*; but the addition of the two last words is unnecessary, as the having hispid seeds is a part of the generical character.

The difference culture is able to produce in plants we have a very eminent instance of in this: our carrots, the red, the yellow, and the whitish kinds, which Tournefort has described as so many species, all are the same plant, all the common wild *Daucus*, meliorated by culture. It's other accidental varieties have also been treated in the same way by authors, and the number of species is thus swelled to no less than ten, though truly and originally but one and the same plant.

A M M I.

AMMI.

THE general umbel is multiple, consisting of fifty radii: the partial umbel is short, and thick set with flowers: the general involucre is composed of a number of linear, punctato-acute leaves, scarce so long as the umbel: the partial involucre is formed of a number of linear, acute, simple leaves, shorter than the umbel: the proper perianthium is scarce visible; the general corolla is disform: the single flowers are formed each of five inflexo-cordate petals, unequal in size in the radius, but equal in the disk: the stamina are five capillary filaments; the anthers are roundish: the germen stands below the receptacle: the styles are two, and reflex; the stigmata are obtuse: there is no pericarpium: the fruit is round, small, striated, and divisible into two parts; the seeds are two, convex and striated on one side.

This genus comprehends the Ammi of authors, and the Ammoides of Boerhaave.

1. *Ammi foliis inferioribus pinnatis lanceolatis serratis, superioribus multifidis linearibus.*

Common Bishop's-Weed.

The Ammi, with the lower leaves lanceolate and serrated, the upper ones multifid and linear.

The root is oblong, slender, and whitish: the radical leaves are placed on long pedicles, and are divided into a multitude of oblong, broad, crenated, and multifid segments: the stalk is round, striated, and two or three feet high; the leaves on it stand singly, and are divided into more numerous, and those much narrower and finer, segments, multifid, and of a dark green. The umbels stand on the tops of the branches; they are very large, the flowers white.

It is common wild in the vineyards of Spain and Italy; we have it in gardens. C. Bauhine calls it, Ammi majus; Dodonæus, Ammi vulgare; Linneus, &c. Ammi laciniis foliorum caulis laciniatis.

The seeds of this are used in the shops as semina ammeos, but improperly; the next species is the true officinal kind.

2. *Ammi foliis inferioribus pinnatis linearibus serratis, superioribus in segmenta angustissima divisis.*

True Bishop's Weed.

The Ammi, with the lower leaves pinnated, linear, and serrated, the upper ones very finely divided.

The root is small, oblong, and white; hard, but of an agreeable taste, like that of a parsnep. The radical leaves stand on long pedicles; they are large, but the pinnae are oblong, narrow, linear, and serrated all the way round. The stalk is round, striated, jointed, and about a foot high; the leaves on it stand singly, and are finely divided, like those of fennel. The umbels stand on the tops of the branches; they are small, and the flowers white. The seed is very slender, and of a very aromatic smell, and acrid taste.

It is a native of Italy; we have it in our gardens. C. Bauhine calls it, Ammi parvum foliis fœniculi; Boerhaave, Ammoides majus odore origani.

Its seeds are used in the shops as a carminative, and are ingredients in many compositions.

3. *Ammi foliis omnibus pinnatis linearibus angustioribus.*

Narrow-leaved Bishop's-Weed.

The Ammi, with all the leaves pinnated, linear, and very narrow.

The root is small, oblong, white, and hard: the radical leaves are narrow, pinnated, and of a dark green; the pinnae are very narrow, oblong, and deeply serrated. The stalk is round, smooth, branched at the top, and about six or eight inches high: the leaves on it stand singly; they are small, finely divided, and of a dusky green. The umbels are very small; the flowers little and white.

It

It is a native of Spain; it grows only on barren, hilly places. C. Bauhine calls it, *Ammoides*; Cæſalpinus, *Amni puſillum*.

BUNIUM.

THE general umbel is multiple, but has fewer than twenty radii: the partial umbel is very short, but thick ſet: the general involucre is formed of many leaves, linear and ſhort; the partial involucre is ſimilar, but of the length of the umbel: the proper perianthium is ſcarce viſible: the general corolla is uniform. The ſingle flowers conſiſt of each five inflexo-cordate petals, equal in ſize: the ſtamina are five ſimple filaments, ſhorter than the flower: the antheræ are ſimple; the germen is oblong, and ſtands below the proper cup: the ſtyles are two, and reflex; the ſtigmata are obtuſe: there is no pericarpium: the fruit is oval, and dividible into two parts: the ſeeds are two, and oval, convex on one ſide, and plane on the other.

This genus comprehends the *Bulbocacaſtum* of Tournefort.

1. *Bunium foliis inferioribus pinnatis, pinnis lineari-lanceolatis.*

The *Bunium*, with the lower leaves pinnated, the pinnae of a linear-lanceolate figure.

Common
Earth Nut.

The root is tuberous, of the ſize of a ſmall walnut, brown on the ſurface, and white within; it lies at a conſiderable depth. The radical leaves are pinnated, three inches long, and a half broad in the whole; the pinnae are narrow, oblong, and pointed at the ends. The ſtalk is round, ſmooth, and divided, toward the top, into two or three branches; it's leaves ſtand ſingly, and are much finer than thoſe of the root: the umbels ſtand at the tops of the branches; they are ſmall, and the flowers are ſmall and white.

It is common with us in paſtures, and it's root is eſculent. Authors have divided it into two ſpecies, from it's being ſometimes larger, ſometimes ſmaller; but theſe are only varieties, the plant the ſame; they call it, in theſe two ſtates, *Bulbocacaſtum majus*, and *Bulbocacaſtum minus*.

2. *Bunium foliis omnibus pinnatis, pinnis linearibus oblongis, umbellis majusculis.*

The *Bunium*, with all the leaves pinnated, the pinnae linear and oblong, the umbels large.

Bulbous
Cummin.

The root is tuberous, of the ſize of a large nutmeg, black on the outside, white within: the radical leaves ſtand on pedicles of two inches long, reddiſh and ſlender; they are divided into a multitude of oblong and narrow ſegments, of a deep green colour. The ſtalk is round, branched at the top, and about eight inches high; it's leaves ſtand ſingly, and are like the radical ones, but ſmaller. The umbels are moderately large, the flowers white.

It is a native of the mountains in Germany. Tournefort calls it, *Bulbocacaſtum minus faxatile precedani folio*; Columna, *Cyrinicum bulbosum*.

The other ſpecies are, 1. The broad-leaved, Alpine *Bunium*. 2. The narrow and ſhort-ſegmented *Bunium*.

CONIUM.

THE general umbel is compoſed of a number of patent radii; the partial umbel is ſimilar: the general involucre is very ſhort, and compoſed of ſeveral leaves; the partial involucre is ſimilar: the proper perianthium is ſcarce diſcernible: the general corolla is uniform: the ſingle flowers conſiſt each of five inflexo-cordated ſegments, unequal in ſize: the ſtamina are five ſimple filaments; the antheræ are roundiſh; the germen ſtands below the perianthium: the ſtyles are two, and reflex; the ſtigmata are obtuſe: there is no pericarpium: the fruit is roundiſh, ſtriated, and dividible into two parts: the ſeeds are two, convex, and nearly hæmiſpherical on one ſide, where they are ſtriated; and plane on the other.

Of this genus there is only one known ſpecies, the *Cicuta* of authors.

CONIUM.

CONIUM.

Hemlock.

The root is large, oblong, and white, often a foot in length, and of the thickness of a moderate parsnep, of a fungous substance, and strong smell, but of an agreeable taste; the radical leaves are very large, a foot and a half long, and as much in diameter at the base; they are composed of a multitude of short, serrated, broad pinnae, of a dark green colour, and bad smell. The stalk is round, smooth, jointed, and branched at the top; it grows to an inch in diameter at the base, and to five feet high; it is usually variegated in a beautiful manner with purple spots, on a dark green ground: the leaves stand singly, and are like the radical ones, but smaller: the umbels stand on the tops of the branches; they are very large; the flowers are moderately large, and white.

It is common in our hedges. C. Bauhine calls it, Cicuta major; Lobel, Cicuta; Linnæus and Van Royen, Conium seminibus striatis.

It is poisonous taken internally, but it is used in plaisters, and other external applications. The other plants, erroneously described under the same general name with this by authors, will be found here under the genera of Ligusticum, Cicuta, &c.

SELINUM.

THE general umbel is multiple, and plano-patent; the partial umbel is similar: the general involucre is composed of a number of lanceolated, linear, reflex leaves; the partial one is similar, patent, and of the length of the corolla: the proper perianthia are scarce visible: the general corolla is uniform: the single flowers consist each of five unequal, inflexo-cordate petals: the stamina are five capillary filaments; the antheræ are roundish; the germen is placed below the proper receptacle: the styles are two, and reflex; the stigmata are simple: there is no pericarpium: the fruit is of an elliptico-oblong, compresso-plane figure, striated each way in the middle, and separable into two parts: the seeds are two, of an oblong, elliptic figure, plane on each side, striated in the middle, and edged with membranaceous rims at the sides.

This genus comprehends the Oroseelinum and Thyseelinum of Tournefort, and the Cervaria of Rivinus.

1. *Selinum palustre levissime lactescens radice unica.*

The marsh Selinum, lightly milky, and with a single root.

The root is single, oblong, and moderately large, of a brownish colour, and disagreeable, acrid taste: the radical leaves stand on long pedicles; they are large, divided into a multitude of oblong, narrow segments, and of a dark green colour: the stalk is round, jointed, branched at the top, and grows to five feet high; the leaves stand singly on it, and are like the radical ones, but smaller: the umbels are large and spreading, the flowers white. The whole plant is lightly lactescent, or, on being cut, yields a small quantity of a somewhat milky juice.

It is frequent in marshy places, in most parts of Europe. Tournefort calls it, Thyseelinum palustre; C. Bauhine, Sefeli palustre lactescens.

2. *Selinum pinnis ad angulos obtusos pinnatis, pinnulis incis, non serratis.*

The Selinum, with the pinnae pinnated at obtuse angles, the pinnules lacinated, not serrated.

The root is very large, oblong, and furnished with fibres at the head; it is often a foot long, and of the thickness of a child's wrist, white, of an acrid taste, and, when cut, yields a viscid, milky liquor in plenty: the radical leaves are very large, formed of a multitude of pinnae, beautifully disposed, and of an oval figure, but pointed at the ends, and lacinated at the edges. The stalk is round, jointed, branched at the top, and four feet high; the leaves stand alternately on it, and are like the radical ones, but smaller: the umbels are large, the flowers white.

It is frequent on the mountains in Germany. Clusius calls it, Oroseelinum; C. Bauhine, Apium montanum folio ampliore.

3. *Selinum foliis radicalibus ovatis inequaliter serratis, radice multiplici.*
The oval, serrated-leaved Selinum, with a multiple root.

The root is composed of a number of oblong bodies, each half an inch in diameter, and often two feet long, all capillated at their tops, black on the outside, white within, and, when cut, affording a thick, mucilaginous juice, of a resinous, but not disagreeable taste: the radical leaves are a foot and a half long, and stand on long pedicles; they are composed of a multitude of pinnae, of a kind of oval figure, but pointed and jagged round the edges; they are of a bluish-green colour, thick, rigid, and glossy: the stalk grows to five or six feet high; it is round, striated, and ramose; the leaves stand alternately on it, and are like the radical ones: the umbels are large, and the flowers white.

It is frequent about the banks of the Rhine, and in the German vineyards. J. Bauhine calls it, *Libanotis dicta cervaria nigra*; others, *Libanotis nigra*; C. Bauhine, *Daucus montianus apii folio major*.

The other species are, 1. The yellow-flowered, cicutaleaved *Selinum*. 2. The anise-leaved, oriental *Selinum*, called African anise, and shrubby *Ferula*. 3. The broad-leaved *Selinum*, called the *Thyselinum* of Pliny; and, 4. The Siberian *Selinum*, with simply-pinnated, inciso-angulated leaves.

A T H A M A N T A.

THE general umbel is multiple and patent; the partial umbel is composed of fewer radii; the general involucre is composed of many leaves, linear, and somewhat shorter than the radii; the partial involucre is linear, and equal to the rays in length; the proper perianthium is scarce distinguishable: the general corolla is uniform: the single flowers consist of five inflexo-cordate petals, somewhat unequal; the stamina are five capillary filaments, of the length of the corolla: the anthers are roundish; the germen stands below the perianthium: the styles are two, and reflex; the stigmas are obtuse: there is no pericarpium: the fruit is composed of two oval seeds, convex, and striated on one side, smooth and plane on the other, and is of an oval figure.

1. *Asbamanta foliis capillaribus, seminibus glabris.* Sp'ignel.
The capillary-leaved Athamanta, with smooth seeds.

The root is oblong, and moderately thick, sometimes single, sometimes multiple, brown on the outside, and white within, and usually furnished at the head with a tuft of hairy matter, formed of the fibres of decayed leaves; the radical leaves are very large; they stand on long pedicles, and are divided into a multitude of extremely narrow and oblong segments; they somewhat resemble the leaves of fennel, but the segments are finer, and not so long. The stalk is round, striated, and branched toward the top; the leaves stand alternately on it, and are like the radical ones, but smaller: the umbels are moderately large, the flowers small and whitish, the seeds large, oblong, striated, and smooth.

We have it wild in the north of England in abundance. C. Bauhine calls it, *Meum folius anethi*; others, *Meum*, and *Meum officinarum*.

The root has been in much esteem as an alexipharmic, and is an ingredient in several of the old compositions.

2. *Asbamanta foliis inferioribus nitidis, umbellis primordialis subfessilibus, seminibus pilosis.*
The smooth-leaved Athamanta, with the primordial umbels subfessile, and the seeds hairy.

The root is oblong, thick, and furnished with many fibres: the radical leaves are large; they stand on long pedicles, and are divided into a multitude of fine, very narrow segments, and of a glossy surface. The stalk is round, jointed, ramose, and a little

little hairy: the leaves stand alternately on it, and are like the radical ones, but somewhat hairy: the umbels are large; the flowers small and white; the seeds hairy: the primordial umbel is subsessile, the lateral ones rise.

It is a native of Italy, Sicily, and some parts of Germany; authors have been much puzzled how to arrange it. Haller calls it, *Libanotis foliis multifidis planis*; Morison, *Myrrhis Sicula clatior tenuioribus foliis*; Tournefort, *Chærophylloem Siculum foliis fophis, semine villosa*.

3. *Asbarama foliis duplicato-pinnatis, planis, umbella hæmisphærica, seminibus hirsutis.*

The duplicato-pinnate, plane-leaved Asbarama, with hæmisphæric umbels, and hairy seeds.

The root is oblong, and very large, often of the thickness of a man's wrist, blackish on the outside, white within, and full of an acrid, gummy juice: the radical leaves are large, and composed of a multitude of pinnae, somewhat broad, serrated at their edges, and of a pale green colour on the upper surface, and greyish below. The stalk is thick, round, striated, and about three feet high: the leaves stand alternately on it, and are like those below, but smaller; the umbels are large; the flowers white.

It is frequent on the mountains of Germany. C. Bauhine calls it, *Daucus montanus apii folio albicans*; J. Bauhine, *Cervaria nigrae species*; Rivinus and Haller, *Libanotis pennulis circa costam dentatis*. Many of the botanical writers have also described it a second time, as a different plant, under the name of *Apium petraeum albicans*.

PEUCEDANUM.

THE general umbel is multiple, very long and thin; the partial umbel is patent: the general involucre is small, and formed of several linear, reflex leaves; the partial involucre is smaller: the proper perianthium is small, and quinque-dentated; the general corolla is uniform: the single flowers consist each of five equal, oblong, crooked, and undivided petals; the stamens are five capillary filaments; the anthers are simple: the germen is oblong, and is placed under the proper receptacle: the styles are two, and small; the stigmata are obtuse: there is no pericarpium. The fruit is oval, surrounded with an ala, striated on both sides, and separable into two parts: the seeds are two, of an oval, oblong, compressed figure on one side, convex, and marked with three elevated ridges; the edge, surrounded with a membranaceous ala, with the top emarginated. The central flowers are often abortive.

1. *Peucedanum foliis quinqueis tripartitis lineari-subulatis integerrimis.*

The Peucedanum, with five lineari-subulated, not serrated segments.

Hog's Feet:
ncl.

The root is oblong and large, of a blackish colour on the outside, greenish within, and full of a strong smelling juice; at the top there is generally a tuft of hairy matter, formed of the fibres of decayed leaves: the radical leaves stand on moderately long pedicles; they are large, and divided into a multitude of very narrow, subulated segments, even at the edges, smooth, and of a deep green: the stalk is round, striated, jointed, and two or three feet high: the leaves stand singly on it, and are like the radical ones, but smaller: the umbels are very large; the flowers small and yellowish.

We have it in our fen ditches; I met with it this year in the isle of Ely plentifully. Lobel calls it, *Peucedanum*; C. Bauhine, *Peucedanum Germanicum*.

The other species are, 1. The shorter-leaved *Peucedanum*; and, 2. The broader-leaved, purple *Peucedanum*.

CRITHMUM.

CRITHMUM.

THE general umbel is multiple, and of an hæmispheric figure; the partial umbels are similar. The general involucre is formed of several reflex, obtuse, lanceolate leaves; the partial involucre is lanceolato-linear, and of the length of the umbel: the proper perianthium is inconsiderable; the general corolla is uniform: the single flowers consist each of five oval, inflex, and nearly equal petals: the stamina are five simple filaments, longer than the corolla; the anthers are roundish; the germen stands under the perianthium: the styles are two, and reflex; the stigmata are obtuse: there is no pericarpium. The fruit is oval, compressed, and separable into two parts; the seeds are two, elliptic, striated on one side, and compresso-plane.

1. *Crithmum foliis lanceolatis carnosiss.*
The lanceolate, thick-leaved Crithmum.

Sampfire.

The root is oblong, and as thick as a child's arm, and of an agreeably aromatic taste. The radical leaves are large, and beautifully divided into a number of oblong, narrow, pointed, and thick segments, fleshy, and full of juice: the stalk is round, thick, striated, ramose, and about fifteen inches high, of a fine strong green, as are also the leaves: the umbels are large; the flowers yellow: the whole plant is succulent, and of a saltish taste.

It is frequent on our sea-coasts, and it's leaves make an excellent pickle. C. Bauhine calls it, *Crithmum five foniculum maritimum minus*; Lobel, *Feniculum maritimum five empetrum*.

2. *Crithmum foliis linearibus, umbellis minoribus.*
The linear-leaved Crithmum, with smaller umbels.

The root is thick and oblong; the leaves, which rise from it, are large, of a pale green, and divided into a multitude of long and narrow segments: the stalk is procumbent in part, and striated, but rises sometimes to two or three feet from the procumbent part: the leaves are placed alternately on it, and are like the radical ones, but smaller: the umbels are large; the flowers white. The whole plant is succulent, and, when wounded, it yields a yellow, resinous juice.

It is frequent on the coasts of Italy and Sicily. C. Bauhine calls it, *Crithmum maritimum grandius cui succus luteus*; Boccone, *Crithmum Siculum baticule alterum genus*.

CACHRYS.

THE general umbel is multiple; the partial umbels are similar: the general involucre is formed of several lineari-lanceolate leaves: the partial ones are similar: the proper perianthium is scarce observable: the general corolla is uniform; the single flowers consist each of five equal, lanceolated, and somewhat erect petals: the stamina are five simple filaments, of the length of the corolla: the anthers are simple; the germen is turbinate, and stands below the perianthium: the styles are two, simple, and of the length of the corolla; the stigmata are capitated. The fruit is roundish, but somewhat oval, angulated, obtuse, very large, and separable into two parts: the seeds are two, very large, very convex on one side, plane on the other, fungous, and each containing a single ovato-oblong nucleus.

1. *Cachrys foliis multifidis, segmentis lineari-lanceolatis.*
The Cachrys, with multifid, lineari-lanceolate leaves.

The root is a foot long, and an inch and half in diameter; at top white, and of an acid taste: the radical leaves are very large, and divided into multitudes of fine, oblong, narrow, and pointed segments: the stalk is thick, round, striated, ramose, and jointed; it's leaves alternate, and like the radical ones, but smaller: the umbels are very

very large; the flowers yellow: the seeds are very large and beautiful. It is, in the whole, an extremely beautiful plant.

It is frequent in Spain, Italy, and some other parts of Europe. C. Bauhine calls it, *Libanotis Cachryophoros semine anguloso*; J. Bauhine, *Libanotis Cachryoparos floribus luteis*.

2. *Cachrys foliis ovato-oblongis asperis.*

The ovato-oblong-leaved, rough Cachrys.

The root is very large, oblong, white, and well tasted; the radical leaves are irregularly pinnate or formed of a multitude of oblong, oval ones, of a pale green colour, and covered thick with a downy matter: the stalk is round, striated, ramose, and three feet high: the leaves stand alternately, and are like the radical ones, but smaller; both they and the stalk are rough and hairy: the umbels are very large; the flowers yellowish, sometimes quite white; the seeds are very large and beautiful.

It is a native of Russia, Hungary, and Tartary; C. Bauhine calls it, *Panacis Heraclaeo similis Ungarica*; others, *Panacea Ungarica edulis*. The Russians and Tartars, in scarcity of corn, make bread of it's roots.

The other species are, 1. The fennel-leaved *Cachrys*. 2. The broader peucedanum-leaved *Cachrys*. 3. The smaller-seeded peucedanum-leaved *Cachrys*. 4. The angelica-leaved, asphodel-rooted *Cachrys*.

FERULA.

THE general umbel is multiple and globose; the partial umbel is similar; the general involucre is deciduous; the partial involucre is small, composed of several narrow leaves: the proper perianthium is very small, and stands on the germen; the general corolla is uniform; the simple flowers consist each of five oblong, erect, and nearly equal petals: the stamina are five filaments, of the length of the corolla; the anthers are simple: the germen is turbinate, and placed under the cap: the styles are two, and reflex; the stigmata are obtuse. The fruit is elliptic, plano-compressed, marked on each side with five prominent ridges, and separable into two parts: the seeds are two, very large, elliptic, plane on each side, and marked each with three distinct striae: the peduncle of the primary umbel has sometimes lateral and opposite peduncles growing from it.

1. *Ferula foliis linearibus longissimis simplicibus.*

The Ferula, with very long, linear, simple leaves.

**Fennel
Giant.**

The root is thick, oblong, and full of a milky juice; the radical leaves are very large, and finely divided; they somewhat resemble those of fennel, but the segments are longer and broader; they are of a pale green: the stalk is round, thick, and eight or nine feet high: the leaves on it are alternate, and like the radical ones, but smaller: the umbels are very large, and almost globular; the flowers large and yellow: the smell of the whole plant is strong, and the taste acrid.

It is a native of Italy and France. Dodonæus calls it, *Ferula*; C. Bauhine, *Ferula foemina* Plinii.

2. *Ferula foliis laciniatis, laciniis tridentatis inequalibus.*

The lacinated-leaved Ferula, with tridentated, unequal segments.

The root is a foot and half long, and two inches in diameter; full of a yellowish, milky juice, of an acrid taste. The radical leaves are very large, glossy, and divided into a multitude of segments, which are oblong, somewhat broad, and three-pointed: the stalk is very thick, round, striated, and grows to six or seven feet high; the leaves are alternate: the umbels very large, globose, and of a yellowish hue: the seeds large, and deeply striated.

It is a native of Italy and Spain. Herman calls it, *Ferula Tingitana folio latissimo, luctido*.

3. *Ferula foliorum alis utrinque acutis, folioli linearibus integerrimis, umbellibus terminalibus subsessilibus.*

The linear and undivided-leaved Ferula, with terminatory, subsessile umbels.

The root is nine inches long, an inch thick, of a brown colour, and full of a milky acrid juice, somewhat yellowish. The radical leaves are large, and divided into a multitude of segments, oblong, narrow, rigid, and glossy: the stalk is round, striated, and ramose: the leaves on it are alternate, finely divided, and glossy: the umbels large and globose, the flowers small and yellow.

It is a native of Istria. Lobel calls it, *Panax Asclepium Ferule folio*. C. Bauhine, *Libanotis Ferule folio et semine*.

The other species are, 1. The broader-leaved *Ferula*. 2. The very fine-leaved *Ferula*. 3. The rigid and short-leaved *Ferula*. 4. The glossy-leaved, Canada *Ferula*.

LASERPITIUM.

THE general umbel is very large, and has from twenty to forty radii; the partial umbel is plane, and consists also of numerous radii: the general involucre is small, and composed of many leaves; the partial involucre is also small, and formed of many leaves: the proper perianthium is inconsiderable, but quinque-nerved: the general corolla is uniform: the single flowers each consist of five nearly equal petals, inflexo-cordate at the ends: the stamina are five setaceous filaments, of the length of the corolla; the antheræ are simple: the germen is roundish, and stands under the proper perianthium: the styles are two, thick and acuminate; the stigmata are obtuse and patent: there is no pericarpium. The fruit is oblong, and separable into two parts, and is ridged, with eight longitudinal membranes: the seeds are two, very large, oblong, and semi-cylindric, plane on one side, but on the other ornamented on the back and edges, with four membranes.

1. *LasERPitium folioli cordatis incis.*

The lacinated, cordate-leaved LasERPitium.

Small Fl:
scrwort.

The root is very long, thick, and white, and has usually a tuft of hairy or fibrous matter at it's top, formed of the fibres of decayed leaves. The radical leaves are large; the foliola or pinnae, which compose them, are of an oval figure, cordate, and cut in round the edges; they are of a bright green above, and a bluish green underneath: the stalk is round, not very thick, striated, rigid, and ramose; the leaves on it stand alternately: the umbels are very broad; the flowers small and white, the seed beautifully edged with membranes.

It is frequent on the mountains of Germany. Rivinius calls it simply, *LasERPitium*; Morison and Tournefort, *LasERPitium foliis latioribus lobatis*; C. Bauhine, *Libanotis latifolia vulgarior*. It's root has been kept in the shops, under the name of white Gentian, and also it's seeds, but both are now disused.

2. *LasERPitium folioli sessilibus tricuspidatis.*

The LasERPitium, with sessile, tricuspidate foliola.

Great Fl:
scrwort.

The root is very large and long, greyish on the outside, white within, of a fungous substance, and agreeable smell: the radical leaves stand on long pedicles, and are very large, divided and subdivided; the pinnae or foliola are short, broad, rigid, and terminated by three segments: the stalk is round, striated, and six or seven feet high; it's leaves large, and like the radical ones, placed alternate at the joints, and a little hairy underneath: the umbels are large; the flowers moderately large; the seeds beautifully edged with membranes, and of a yellowish colour.

It is a native of the southern parts of France. C. Bauhine calls it, *LasERPitium Gallicum*; J. Bauhine, *LasERPitium regione Massiliæ alatum*.

The

The other species are, 1. The very long and narrow-leaved *Laslerpitium*. 2. The stinking *Laslerpitium*, with angulated, bristle leaves. 3. The felinum-leaved *Laslerpitium*. 4. The *Laslerpitium*, with undivided and even foliola. 5. The daucus-leaved *Laslerpitium*, with viscus seeds. 6. The broad, lobated-leaved *Laslerpitium*. 7. The great, roundish-leaved, Alpine *Laslerpitium*. 8. The purple, smallage-leaved *Laslerpitium*. 9. The very long-leaved *Laslerpitium*.

HERACLEUM.

THE general umbel is very large, and multiple; the partial umbel plane: the general involucre is deciduous, and formed of several leaves; the partial involucre are dimidiated outwardly, and consist of linear-lanceolate leaves, from three to seven in number; the exterior ones longer than the others; the proper perianthium is scarce visible: the general corolla is disform and radiated: the single flowers of the disk consist each of five equal petals; the single flowers of the radius consist of five petals, unequal in size; the exterior ones being larger and more bifid, oblong and uncinated. All the flowers have five stamina, longer than the petals; the antheræ are small: the germen is of a subovate figure, and stands under the cup; the styles are two, erect and short; the stigmata simple: the fruit is elliptic, compressed and emarginated, and striated on each side in the middle; the seeds are two, oval, compressed, and foliaceous.

In some of the *Heraclea*, the flowers of the radius only are females and fertile, those of the disk males, sterile or abortient: some are throughout hermaphrodites, and the involucre are sometimes wanting. This genus comprehends the *Sphondylium* of authors.

1. *Heracleum foliis pinnatis, foliolis quinatis, intermediis sessilibus, floribus radiatis.*

The pinnated-leaved *Heracleum*, with quinate leaves, and radiated flowers.

The root is two feet long, and three inches in diameter; the radical leaves are large, and formed of a multitude of small, cordated, and acuminate leaves, placed in a regular and very singular quinate order; they are rigid, of a strong green, and a little hairy: the stalk is as thick as a child's arm, round, striated, reddish toward the bottom; the leaves on it like the radical ones, but smaller: the umbels are large and white, the seed broad.

It is a native of the Alps, and of Siberia. Dalechamp calls it, *Panax Heracleum*; C. Bauhine, *Panax sphondylii folio*.

2. *Heracleum foliis pinnatifidis.*

The pinnatifid-leaved *Heracleum*.

Cow
Parasce.

The root is large and white; the radical leaves very large, divided into a multitude of larger or smaller segments, of a greyish green, and hairy: the stalk is striated, thick, and five feet high; the umbels very broad: the flowers white; the seeds large and broad.

It is common in our meadows. C. Bauhine calls it, *Sphondylium vulgare hirsutum*; others simply, *Sphondylium*.

The other species are, 1. The green-flowered, quinate-leaved, Siberian *Heracleum*. 2. The smooth, broad-leaved, Alpine *Heracleum*.

LIGUSTICUM.

THE general umbel is multiple; the partial ones also multiple: the general involucre is unequal, and composed of seven leaves; the partial involucre have only three or four leaves: the perianthium is small, quinquepedentate, and is placed on the germen: the general corolla is uniform: the single flowers consist each of five equal petals, bent at the points, and carinated inwards: the stamina are five capillary filaments, shorter than the corolla; the antheræ are simple: the germen is placed under the

the receptacle : the styles are two, and simple ; the antheræ are simple : the fruit is naked, oblong, angular, sulcated, and separable into two parts ; the seeds oblong, smooth, striated on one side, and plane on the other.

This genus comprehends the *Ligusticum siler*, and *Cicutaria* of authors.

1. *Ligusticum foliis multiplicibus, foliolis superne incisis.* No.
The *Ligusticum*, with multiple leaves cut in on the upper part. bage.

The root is thick, long, and woody ; the leaves are very large, and formed of a multitude of smaller leaves, which are broad, large, and cut in toward the top : the stalk is round, striated, ramose, and six feet high : the umbels are large, the flowers yellow.

It is a native of Germany. C. Bauhine calls it, *Ligusticum vulgare*. It's seed is an aromatic and carminative.

2. *Ligusticum foliis multiplicato-pinnatis, foliolis pinnatis incisis.* Stinking
The *multiplicato-pinnate-leaved Ligusticum*, with the hemlock.
leaves divided pinnately.

The root is large, long, and white ; the leaves very large and compound ; the pinnae divided themselves in a pinnated manner, jagged at the edges, and of a dark green : the stalk is round, striated, ramose, and four feet high ; the umbels are very broad ; the flowers small and white, the seeds short.

It is a native of the Alps. C. Bauhine calls it, *Cicutaria latifolia foetidissima* ; Parkinson, *Seseli Peleponnesiacum*.

The other species are, 1. The great, narrow-leaved, stinking *Ligusticum*. 2. The narrow-leaved *Ligusticum*, called *Siler montanum*. 3. The great, fine-divided-leaved *Ligusticum*. 4. The great, smooth, hemlock-leaved *Ligusticum*. 5. The long and multiid-leaved *Ligusticum*. 6. The smallage-leaved *Ligusticum*. 7. The ferule-leaved *Ligusticum*.

ANGELICA.

THE general umbel is roundish and multiple ; the partial umbel, while in flower, is perfectly globose : the general involucre is composed of either three or five leaves ; the partial involucre is small, and composed of eight leaves : the proper perianthium is small, and quinque-dentate ; the general corolla is uniform : the single flowers consist each of five deciduous, lanceolate, and slightly crooked petals : the stamina are five simple filaments, longer than the corolla ; the antheræ are simple : the germen stands under the perianthium : the styles are two, and reflex ; the stigmata obtuse. The fruit is naked, roundish, angular, and separable into two parts : the seeds are two, of an oval figure, plane on one side, and surrounded with a rim ; convex on the other, with three longitudinal ridges.

1. *Angelica foliorum impari lobato.* Angelica.
The *Angelica*, with the odd leaf lobated.

The root is brown, oblong, an inch or two thick, fragrant and acid. The leaves are very large, composed of pinnated foliola, of an oblong, oval figure, dentated at the edge, and the odd leaf at the end of the pinna lobated : the stalk is round, striated, as thick as a child's arm : the umbels are very large, and of a globose figure : the flowers very small and greenish.

It is wild with us in some places, but is also very common in our gardens. C. Bauhine calls it, *Angelica sativa*. It's root is a cardiac, alexipharmic, sudorific, and carminative, and is much used in the shops.

The other species are, 1. The lucid-leaved, American *Angelica*, called, by Tournefort, American *Masterwort*. 2. The great, narrow, serrated-leaved *Angelica*. 3. The great, narrow-leaved, water *Angelica*. 4. The yellow-flowered, Canada *Angelica*. 5. The

5. The little, umbelled Angelica. 6. The smallage-leaved Angelica. 7. The Columbine-leaved Angelica.

SIUM.

THE general umbel is of an uncertain figure; the partial umbels are patent and plane: the general involucre is composed of many leaves, reflex and shorter than the umbels: the leaves are lanceolate: the partial involucre is small, and formed of several linear leaves; the proper perianthium is very small: the general corolla is uniform; the single flowers are composed each of five equal, inflex petals: the stamina are five simple filaments; the anthers are simple: the germen is small, and stands under the perianthium: the styles are two, and reflex; the stigmata are obtuse. The fruit is naked, of an oval or roundish figure, small, striated, and separable into two parts: the seeds are two, roundish, striated, and convex on one side, plane on the other.

1. *Sium foliis pinnatis, umbella terminatrice.*

The *Sium*, with pinnated leaves, and terminatory umbels.

Water
Parsnep.

The roots are fibrous; the leaves are simply pinnated, or composed of only two series of foliola, arranged along a middle rib, with an odd one at the end; they are oblong, oval, and serrated at the edges: the stalk is thick, jointed, and striated; the umbels are large; the flowers small and white; the seeds short.

The plant is common in ditches with us. C. Bauhine calls it, *Sium majus latifolium*; others, *Pastinaca aquatica*.

2. *Sium foliis pinnatis, floralibus ternatis.*

The pinnated-leaved *Sium*, with the floral ones ternate.

Shirret.

The root is composed of a number of oblong, thick, tender, brittle tuberosities, of a whitish colour, and agreeable taste. The leaves are pinnated; the pinnæ oval or oblong, pointed at the ends, and serrated deeply round the edges: the stalk is round, striated, ramose, and two feet high; the leaves on it like the radical ones, but smaller, of a dark green, and more pointed at the ends: the umbels are small; the flowers white, and of a very sweet smell.

It is a native of the East Indies, but common in our gardens; the roots are eaten. C. Bauhine calls it, *Sisarrum Germanicum*; Dalechamp, *Sisarrum majus*.

3. *Sium foliis integris pinnatis, et trilobatis, soboliferum.*

The soboliferous *Sium*, with entire, pinnated, and trilobated leaves.

Pin:
3in.

The root is oblong, and of the thickness of a man's little finger; whitish, soft, and surrounded on the surface by many slight, circular furrows, of an agreeable smell, and sweet taste, with something aromatic and bitter. Its length is usually about three inches, and toward the bottom it is often divided into two parts, which the Chinese suppose to resemble the legs of a man, as the upper part, which is single, the body; 'tis hence that they call the plant *Nindsin*, which signifies like a man. As the plant grows up, there are often two or three more of these roots, produced by the sides of the first, and they all become somewhat larger. The upper parts of them all are furnished also with numbers of tubercles, some of which are to become mere roots, some are to give rise to leaves and stalks.

The stalk grows to two feet high; it is round, thick, striated deeply, and has round prominent joints, at about an inch and half distance; from these joints arise so many branches, and the stalk itself is also ramose at the top: the leaves stand alternately, one at every joint: their pedicles are an inch and half long; they embrace the stalk at their bottom, and are hollowed half the way, and striated all the rest: the leaves are of very different size and figure, according to the state of the plant. The first leaves that appear are simple, roundish, cordated at the base, and serrated round the edges, and about an inch long. As the plant grows up, they become pinnated, and are composed of three or four pair of pinnæ, moderately large, of an ovato-ecuminate figure, and serrated round the edges. Finally, as the plant grows taller, those on the upper part of the stalk are trilobate, and the pinnæ smaller, scarce exceeding the size of one's

nal. They are all of a bright green, and smooth: the umbels are about two inches broad, the flowers small and white; the seeds are like those of anise in shape and size, but reddish, and bifid; and beside the seeds there are produced, in the divarications of the upper branches, a kind of soft tubercles, of a turbinated figure, and of the bigness of a pea, which planted in the earth, or naturally falling on it, produce new plants. The roots are gathered in the beginning of winter, and prepared by macerating some days in a decoction of rice, and then imbibing the steam of the same decoction before drying; they are by this means rendered almost transparent.

The plant is a native of China and Tartary, probably also of some parts of North America, as the Ginseng also is. The Chinese call it, Nisji, Nindün, and Dün; the Tartari, Sofai; Kæmpler calls it, *Sisārum montanum coracense radice non tuberosa*. It is esteemed, all over the East, a powerful cordial, and a provocative to venery, and is given in almost all diseases; they use it in the same cases with the Ginseng, but the other is preferred greatly to it.

The other species of Sium are, 1. The serrated-leaved, water Sium. 2. The greatest, broad-leaved Sium. 3. The creeping Sium. 4. The Sium flowering at the joints, with sessile umbels. 5. The aromatic Sium, or Amomum of the shops.

BUBON.

THE general umbel is composed of about ten radii, the middle ones shorter than the rest; the partial umbel has from fifteen to twenty radii: the general involucre is composed of five equal, lanceolated, acuminate leaves, much longer than the umbel, and permanent: the partial involucre is composed of a larger number of the like leaves, of the length of the umbel: the proper perianthium is permanent, very small, and quinque-dentate; the general corolla is uniform: the single flowers consist each of five oblong petals, of a lanceolated figure, and inflex; the stamina are five simple filaments, of the length of the corolla; the anthers are simple: the germen is oval, and stands under the receptacle; the styles are two, setaceous, permanent, nearly of the length of the corollula, and reflexo-patent: the stigmata are obtuse; the fruit is naked, oval, striated, hairy, coronated, and separable into two parts: the seeds are two, oval, plane on one side, and on the other convex, striated, and hairy.

Bubon foliolis rhomboideo-ovatis incis, umbellis numerosissimis.

The Bubon, with rhomboid-oval, serrated foliola, and very numerous umbels.

Macedonian
Parsley.

The root is oblong, white, and as thick as a man's finger; the leaves are composed of a number of pinnae, which are large, somewhat like those of smallage, serrated round the edges, smooth, and of a dark green. The stalk is round, striated, rumose, and two feet high, hairy, and but moderately thick; the umbels are small, very numerous, and white.

It is a native of Macedonia; we have it in gardens. C. Bauhine calls it, *Apium Macedonicum*; others, *Petroelinum Macedonicum*. Its seeds are carminative, and are ingredients in many compositions.

CUMINUM.

THE general umbel, and the partial ones also, are frequently quadripartite. The general involucre is composed of four leaves, longer than the umbel; they are sometimes intire, sometimes trifid: the partial involucre is similar: the proper perianthium is very small; the general corolla is uniform: the single flowers consist each of five inflexo-emarginated, and somewhat unequal petals: the stamina are five simple filaments; the anthers are simple: the germen is oval, larger than the flower, and stands under its cup: the styles are two, and very small; the stigmata are simple: the fruit is naked, of an oval figure, and striated: the seeds are two, of an oval figure, convex and striated on one side, smooth and plane on the other.

Of this genus there is only one known species.

CUMINUM.

CUMINUM.

Cummin.

The root is oblong, slender, white, and of a sweetish taste; the leaves are small, and divided into a multitude of fine oblong, narrow segments, of a dusky green colour, and smooth: the stalk is round, striated, ramose, and about a foot high; the umbels are moderately large; the flowers small and white; the seeds oblong and striated.

It is cultivated in the island of Malta: C. Bauhine calls it, *Cuminum semine longiore*. The seeds of it are sometimes hairy, whence some have attempted to make another species, under the name of *Cuminum hirsuto semine*, though they agree, that all other parts are perfectly alike in both. Some also have described another species, under the name of *Cuminum dulce*, not knowing that *Cuminum dulce* is the name by which the Maltese call anise. The seeds of Cummin are carminative, but very nauseous.

SISON.

THE general umbel consists of fewer than six radii, and these unequal; the partial umbel has less than ten radii, and those also unequal. The general involucre is composed of four leaves, and unequal; the partial involucre is similar: the perianthium is very small; the general corolla is uniform; the partial corolla is formed of five equal, lanceolated, inflex petals. The stamina are five capillary filaments, of the length of the corolla; the antheræ are simple: the germen is oval, and stands under the cup: the styles are two, and reflex; the stigmata are obtuse: the fruit is naked, oval, striated, and separable into two parts: the seeds are two, oval, convex, and closed on one side, plane and smooth on the other.

1. *Sison foliis pinnatis, umbellis pendulis.*Com
Parsley.

The Sison, with pinnated leaves, and pendulous umbels.

The root is small oblong, white, and fibrated: the leaves are beautifully pinnated; they consist of six or eight pair of oval, acuminate pinnae, finely serrated round the edges, and terminated by an odd one: the stalks are slender, numerous, round, striated, very ramose, often procumbent, or oblique. The umbels are small, and in general pendulous; the flowers very small and white.

It is frequent in our corn-fields. Ray calls it, *Selinum fil foliis*; Tournefort, *Sium arvense*.

2. *Sison foliis subcapillaribus.*True Bishop's
Weed.

The Sison, with subcapillary leaves.

The root is small, oblong, whitish, and sweet to the taste: the leaves are moderately large, and divided into many segments, which are long, narrow, and almost capillary; they resemble the leaves of fennel: the stalk is round, striated, ramose, a foot and half high, and the umbels are small; the flowers are moderately large and white.

It is a native of Italy; but we have it in our gardens. C. Bauhine calls it, *Ammi parvum foliis feniculi*.

The seeds of this plant are the true *Semina Ammeos* of the shops, used as a carminative and aperient.

OENANTHE.

THE general umbel is composed of a few radii, the partial umbel of a great number: the general involucre has many leaves; the partial involucre is small, and composed also of several leaves: the perianthium is moderately large, permanent, and quinque-dentate: the general corolla is difform, and radiated: the single flowers of the disk are hermaphrodites; they consist of five inflexo-cordated, and nearly equal, petals: the single flowers of the radius are hermaphrodites, and consist

of

of five very large, unequal, inflexo-hisid petals: the stamina are five simple filaments; the antheræ are roundish; the germen is placed under the cup: the styles are two; they are subuluted, and permanent: the stigmata are obtuse: the fruit is naked, sub-oval, coronated, and separable into two parts: the seeds are two, suboval, convex, and striated on one side, plane on the other, and dented at the top.

1. *Oenanthe foliis caulinis inflato-fistulosis teretibus.* **Common**
The Oenanthe, with the leaves on the stalk rounded and hollow. **Droppwort.**

The root is composed of a number of oval tuberosities, affixed to the ends of white and thick fibres: the radical leaves are large, and divided into a number of fine segments; those on the stalk are cylindric, hollow, and terminate in a few narrow divisions: the stalk is round, hollow, striated, and ramose; it grows to two feet high; the umbels are small, the flowers large and white.

The plant is common with us in wet places. C. Bauhine calls it, *Oenanthe aquatica*.

2. *Oenanthe foliis omnibus multifidis obtusis subæqualibus.* **Hemlock**
The Oenanthe, with all the leaves multifid, obtuse, and nearly **Droppwort.**
equal.

The root is composed of a number of tuberous bodies, oblong, thick, and full of a yellowish, acrid juice: the leaves are large, of a pale green colour, and formed of a multitude of large, broad, and indented pinnæ. The stalk grows to four or five feet high, and is thick, striated, and ramose: the umbels are very large; the flowers are white.

It is common about waters, with us. Ray calls it, *Oenanthe cicutæ facie*; C. Bauhine, *Oenanthe cherophylli foliis*. It is a terrible poison; many have perished by inadvertently eating it.

The other species are, 1. The thick, apium-leaved *Oenanthe*. 2. The narrow-segmented *Oenanthe*. 3. The rue-leaved *Oenanthe*. 4. The little, water *Oenanthe*. 5. The Portugal *Oenanthe*, with large, roundish seeds.

Class the Fifth. Order the Second.

Division the Sixth.

Pentandria Digynia, with two naked seeds, and only partial involucre.

PHELLANDRIUM.

THE general umbel is multiple; the partial one is similar: there is no general involucre; the partial one consists of seven acute leaves, of the length of the umbellule: the perianthium is small, permanent, and quinque-dentate; the general corolla is nearly uniform; the single flowers are unequal; they are composed each of five acuminate, cordato-inflex petals: the stamina are five capillary filaments, longer than the corolla: the antheræ are roundish: the germen stands under the perianthium: the styles are two, subuluted, erect, and permanent: the stigmata are obtuse: the fruit is naked, smooth, and coronated with the perianthium and pistils; it is separable into two parts: the seeds are two, oval and smooth.

Of this genus there is only one known species.

PHELLANDRIUM.

Water Hemlock.

The root is oblong, thick, white, and fibrated. The stalk is very thick, an inch and a half, or more, in diameter, striated, hollow, jointed, and ramose: the leaves are six inches long, and near as much broad, sometimes larger, and are finely divided into narrow segments: the umbels are small, the flowers white, but the antheræ reddish.

It is common in waters. Lobel calls it, *Cicutaria palustris*; C. Bauhine, *Cicutaria palustris tenuifolia*.

CICUTA.

C I C U T A.

THE general umbel is roundish, and composed of numerous radii, equal in length: the partial umbels are roundish, and composed also of numerous, equal, setaceous radii: the partial involucre is formed of a number of short, setaceous leaves: the perianthium is very small: the general corolla is uniform: the single flowers consist each of five nearly equal, oval, inflex, and small petals: the stamina are five capillary filaments, longer than the corolla: the anthers are simple; the germen stands under the cup; the styles are two, filiform, longer than the corolla, and permanent: the stigmata are capitated: the fruit is naked, roundish, striated, and separable into two parts: the seeds are two, oval, convex, striated on one side, and plane on the other.

Of this genus there is but one known species.

C I C U T A. Long-leaved Water Hemlock.

The root is oblong, as thick as a man's thumb, and fibrated: the leaves stand on long pedicles, and are divided into a number of oblong, narrow, and serrated segments: the stalk is round, striated, ramose, red at the bottom, and two or three feet high: the umbels are large, the flowers white.

It grows by waters with us, but happily is not common. Gesner calls it, *Cicuta aquatica*; Dodonæus, *Sium alterum*; Rivinus, *Cicutaria*. It is a terrible poison: Rivinus says cattle eat it unhurt, but Linnæus gives an instance of oxen killed by it.

E T H U S A.

THE general umbel is patent, the interior radii are gradually shorter, the middle ones shortest of all: the partial umbels are small and patent: the partial involucre are dimidiated, placed exteriorly, and composed of either three or five leaves, which are very long, linear, and pendulous: the perianthium is very small; the general corolla is uniform: the single flowers consist each of five unequal, inflexo-cordate petals: the stamina are five simple filaments; the anthers are roundish: the germen stands under the cup: the styles are two, and reflex: the stigmata are obtuse: the fruit is naked, of a roundish, oval figure, and separable into two parts: the seeds are two, roundish, striated, and thence a third part plane.

Of this genus also there is only one known species. It is called, *Cynapium* and *Cicuta fatua*, by authors.

E T H U S A. Fools Parsley.

The root is oblong, white, and slender: the leaves are large, and formed of a multitude of pinnae; the foliola are small, oval, pointed, and serrated; the whole leaf much resembles that of hemlock, but that the segments are narrower. The stalk is slender, round, striated, ramose, and three feet high: the umbels are moderately large; the flowers white, and the seeds very large: the stalk is not spotted, like that of hemlock, but is often dusky.

It is common in gardens, and other cultivated places. C. Bauhine calls it, *Cicutaria minor petroselinum similis*.

C O R I A N D R U M.

THE universal umbel has but few radii, the partial has several: the partial involucre is composed of three linear leaves, placed outwardly, and the perianthium is quinquecuted: the general corolla is difform and radiated: the single flowers of the disk are hermaphrodites, and composed of five equal, inflexo-cordate petals: the single flowers of the radius are hermaphrodite, and composed of five unequal, inflexo-cordate petals; the exterior one being very large, divided into two parts, and the lateral ones nearest it having each one large, lateral segment: the stamina are five simple filaments; the anthers are roundish; the germen stands under the cup: the styles are two, and small: the stigmata of the females are capitated: the fruit is naked, exactly

globose, and separable into two parts: the seeds are two, hæmispheric and concave; the flowers of the disk are often abortive.

Coriandrum fructibus globosis.

Coriander.

The root is oblong, slender, and white; the leaves are of two kinds; the radical ones are composed of broad, crenated pinne; those on the stalk are divided into fine oblong and narrow segments. The stalk is round, striated, slender, and two feet high, and ramose; the umbels are moderately large; the flowers reddish, sometimes quite white.

It is a native of Germany, where it grows in corn-fields and by road-sides; it is sown in many places for the seeds. C. Bauhine calls it, *Coriandrum majus*. Its seeds are the Coriander seed of the shops, and are a pleasant carminative.

Authors mention two other species of Coriander, a larger and a smaller, with testiculated seeds, but they appear to be no more than accidental varieties of this common kind.

SCANDIX.

THE general umbel is long, but composed of only a few radii; the partial ones have more rays: the partial involucre is formed of five leaves, of the length of the umbellate: the perianthium is scarce visible; the general corolla is slightly difform; the flowers in the disk are hermaphrodites; those in the radius females; each consists of five petals, of a cordato-inflex figure; the inner ones smaller, the outer one larger: the stamina are five capillary filaments; the antheræ are roundish: the germen is oblong; the styles are two; they are subulated, erect, of the length of the smallest petals, and permanent: the stigmas are obtuse: the fruit is naked, long, subulated, and separable into two parts: the seeds are two, subulated, convex, and sulcated on one side, and plane on the other: the flowers of the disk are generally abortive.

This genus comprehends the *Scandix*, *Cerefolium*, *Odorata*, and some of the species of *Myrrhis*, of authors.

In the *Scandix* the seeds are filiform, and have a kernel included in their base. In the *Cerefolium* the seeds are ovato-subulated and striated, the involucre green and permanent, and the flowers all hermaphrodites. In the *Odorata* the seeds are angulated, the involucre deciduous, the flowers of the disk male, and those of the radius hermaphrodite.

1. *Scandix feminibus rostro longissimo.* **Shepherds**
The Scandix, with very long, rostrated seeds. **Needle.**

The root is oblong, slender, fibrated, and sweet to the taste. The leaves are small, and divided into a multitude of narrow, oblong segments; they stand on long pedicels. The stalks are round, firm, striated, ramose, and about eight inches high. The flowers are small and white; the fruit very long, and resembling the beak of the cranes bills.

It is common in our corn-fields. C. Bauhine calls it, *Scandix femine rostrato*; others, *Pecten Veneris*.

2. *Scandix feminibus hispida.* **Rough-seeded,**
The rough-seeded Scandix. **Wild Chervil.**

The root is small, oblong, and white. The leaves are pinnated and composite; the pinne are short, broad, crenated, and hairy. The stalk is round, slender, ramose, and two feet high; it has a few thin, weak spines, or hairs, on it. The umbels are small, the flowers white.

It is common with us under hedges. Rays calls it, *Myrrhis sylvestris feminibus asperis*; Rivinus, *Caucalis foliis cerefolii*.

3. *Scandix feminibus nitidis ovato-subulatis*
The Scandix, with smooth, ovato-subulated seeds. **Cherbit.**

The root is white, oblong, slender, and fibrated. The leaves resemble those of parsley, but that the pinnae are smaller, and more divided. The stalk rises to four feet high; it is round, striated, hollow, and jointed at considerable distances. The umbels are large, the flowers small and white.

It is wild in many parts of Europe; with us it is cultivated for sallads. C. Bauhine calls it, *Chærefolium sativum*; Rivinus, simply, *Cærefolium*.

The other species are, 1. The great Cretic Scandix. 2. The very fine-leaved Scandix. 3. The long and smooth-seeded, wild Scandix. 4. The yellow-flowered, fine-leaved Scandix. 5. The fennel-leaved, rough-seeded Scandix. 6. The broad-leaved, reddish-flowered, rough Scandix. 7. The trifoliate, Canada Scandix.

CHÆROPHYLLUM.

THE general umbel is patent; the partial ones have nearly the same number of radii: their involucre are formed of hollow, lanceolated, reflex leaves, of the length of the umbellules, and from five to ten in number: the perianthium is scarce observable: the general corolla is nearly uniform: the single flowers consist of each five inflexo-cordate petals, of which the exterior are somewhat the larger: the stamina five simple filaments, of the length of the umbellule: the anthers are roundish; the germen stands below the cup; the styles are two, and reflex; the stigmata are obtuse: the fruit is naked, ovato-oblong, acuminate, and separable into two parts: the seeds are two, oblong, attenuated at top, convex on one side, and plane on the other.

1. *Chærophyllum feminibus lævibus nitidis, petiolis ramiferis simplicibus.*

The Chærophyllum, with smooth, nitid seeds, and the ramiferous petiole simple. **Wild Cicely.**

The root is long, thick, and white; the leaves are large, and composed of a multitude of oblong, pointed, serrated pinnae, of a pale green colour, a little hairy, and soft to the touch. The stalk grows to four feet high; it is thick, hollow, striated, and ramose. The umbels are large; the flowers small and white, the seeds are long, smooth, and black, when ripe.

It is common under hedges, Ray calls it, *Myrrhis sylvestris feminibus lævibus*; others, *Myrrhis sylvestris*.

2. *Chærophyllum caule maculato, geniculis tumidis.*
The spotted-stalked Chærophyllum, with tumid joints. **Wild Cherbit.**

The root is long, white, and woody. The leaves are large, and stand on long pedicels; they are composed of a number of large, broad, and serrated pinnules, of a pale green colour, and hairy. The stalk rises to three feet high; it is hairy, and spotted with red, and tumid at the joints. The umbels are large, the flowers little and white.

It is frequent in most parts of Europe. C. Bauhine calls it, *Chærophyllum sylvestre*; Rivinus, *Myrrhis*.

SESELI.

THE general umbel is uncertain in figure; the partial umbels are very short, multiple, and almost round; their involucre is composed of several leaves, of the length of the umbellule, narrow, and pointed; the perianthium is scarce observable: the general corolla is nearly uniform: the single flowers are composed each of five inflexo-cordate, and slightly unequal, petals: the stamina are five subulated filaments: the anthers are simple: the germen stands under the receptacle: the styles are two, and reflex: the stigmata are obtuse: the fruit is naked, oval, small, striated, and separable into

into two parts: the seeds are two, oval, convex, and striated on one side, and plane on the other.

1. *Seseli foliis brevibus, segmentis brevibus linearibus.*

The short-leaved Seseli, with short, linear segments.

**Dutch
Saxifrage.**

The root is oblong, slender, and yellowish, or white. The leaves are composed of a multitude of short, narrow, linear segments; the top of the root is coronated with a tuft of hairy matter, from the fibres of decayed leaves. The stalk is slender, and scarce erect, striated, a foot high, and furnished with a few leaves, finely divided, but small. The umbels are moderately large, the flowers small, sometimes yellowish, often white.

It is common in Germany and Holland. Morison calls it, *Saxifraga montana minor multifido folio*; C. Bauhine, *Daucus montanus multifido folio*.

2. *Seseli foliis longioribus, segmentis longiusculis angustissimis.*

The longer-leaved Seseli, with very narrow, long segments.

The root is long, slender, capillated at the top, black on the surface, and white within. The leaves are long, and divided into a multitude of long, and very narrow, segments, and are of a pale green colour. The stalk is round, slender, striated, a foot and a half high, and ramose. The umbels are small, the flowers white.

It is frequent in most parts of Europe. C. Bauhine calls it, *Thapsia fœniculi folio*.

The other species are, 1. The short-leaved Seseli, called broad-leaved Meum. 2. The long, glaucous-leaved Seseli, called Mountain Saxifrage. 3. The large-leaved, yellow-flowered Seseli.

IMPERATORIA.

THE general umbel is plane and multiple; the partial umbels are unequal: the partial involucre are of the length of the umbellule, and formed of several long, narrow leaves: the perianthium is scarce observable: the general corolla is uniform: the single flowers are composed each of five inflexo-cordate, and nearly equal, petals: the stamina are five capillary filaments: the antheræ are roundish: the germen is placed under the perianthium: the styles are two, and reflex: the stigmata are obtuse: the fruit is naked, round, compressed, and separable into two parts: the seeds are two, oval, furrowed with two lines on one side, and surrounded with a broad margin.

Of this genus there is only one known species.

IMPERATORIA.

Wasserwort.

The root is thick, oblong, oblique, and rough on the surface, furnished with large fibres, and of an acrid, aromatic taste, brown on the outside, white within. The leaves are ternate, or three joined together, as so many lobes, on each pedicle, and each of them is again divided into three segments; they are large, of a deep green colour, and serrated at the edges. The stalk is round, striated, jointed, ramose, and two or three feet high. The umbels are moderately large; the flowers white.

It is a native of the Apennines, and of several parts of Germany; we have it in gardens. Camerarius calls it, *Magistrantia*; C. Bauhine, *Imperatoria major*; Dodonæus, *Astruthion*.

It's root is a cordial and sudorific, and is an ingredient in many compositions.

Class the Fifth Order the Second.

Division the Seventh.

Pentandria Digynia, with two naked seeds, and with no involucre.

THAPSIA.

THE general umbel is large, formed of about twenty radii, all nearly of equal length; the partial umbels consist of as many nearly equal rays; neither have any involucre; the perianthium is scarce observable: the general corolla is uniform; the single flowers consist each of five crooked, lanceolated petals: the stamina are five capillary filaments, of the length of the corolla: the antheræ are simple; the germen is oblong, and placed under the cup: the styles are two, and short: the stigmata are obtuse: the fruit is naked, oblong, surrounded longitudinally with a membrane, and separable into two parts: the seeds are two, large, oblong, convex, pointed at each end, and have on each side a plane margin, large, and undivided, which is emarginated at top and bottom.

1. *Thapsia foliis lanuginosis in segmenta linearia divisis, umbellis latis.*
The Thapsia, with lanuginous leaves, divided into linear segments, with broad umbels.

The root is long and thick, coronated with a tuft of fibrous matter at top, blackish on the outside, white within, and full of an acrid, milky juice. The leaves are large, divided into long, and somewhat broad, linear segments, pointed at the extremities, and of a pale green colour, covered with a light, downy matter. The stalk is round, striated, jointed, and hollow: the umbels are very large, and the flowers yellow.

It is a native of Spain and Portugal. C. Bauhine calls it, *Thapsia latifolia villosa*, others, *Thapsia flore luteo, folio lato*.

2. *Thapsia foliis glutinosis, umbellis subglobosis.*
The glutinous-leaved Thapsia, with subglobose umbels.

The root is oblong, very thick, brittle, blackish on the surface, white within, and full of a white, acrid juice. The leaves are large, and divided into somewhat broad segments, and are continually covered with a glutinous, liquid matter. The stalk rises to two feet high; it is round, striated, slender, and ramose: the umbels are moderately large, and arched, so that they approach to a globose figure: the flowers are yellow.

It is a native of Spain. C. Bauhine calls it, *Thapsia foliis Libanotis fortidissima*.

The other species are, 1. The smallage-leaved, stinking *Thapsia*. 2. The narrow-leaved *Thapsia*, called *Panax asclepium*. 3. The *Thapsia* with very broad seeds. 4. The white-flowered, lucid-leaved *Thapsia*.

The roots of all the species are violently purgative, and unsafe medicines.

PASTINACA.

THE general umbel is multiple and plane; the partial umbel is multiple; neither has any involucre: the general corolla is uniform: each flower consists of five lanceolated, crooked petals: the perianthium is scarce observable: the stamina are five capillary filaments: the antheræ are roundish: the germen stands under the cup: the styles are two, and reflex: the stigmata are obtuse: the fruit is naked, compresso-plane, elliptic, and separable into two parts: the seeds are two, elliptic, plane on each side, and surrounded with a margin.

1. *Pastinaca foliis simpliciter pinnatis.* Parsnep.
The Pastinaca, with simply pinnated leaves.

The root is oblong, white, and fibrated, of a sweet taste, and esculent. The leaves are large, and pinnated; they consist of a double series of large, oval, acuminate pinnae, serrated round the edges, set on a rib, terminated by an odd pinna at the end. The stalk is round, striated, ramose, and jointed; it grows to three feet high. The umbels are large, the flowers yellow.

It is common about our road-sides. C. Bauhine calls it, *Pastinaca sylvestris latifolia*. Authors describe the garden Parsnep as a different species, but it is evidently the same plant; altered only by culture.

2. *Pastinaca foliis duplicato-pinnatis.* Illyrian
The duplicato-pinnate leaved Pastinaca. Costus.

The root is long and thick, covered with a brownish rind, and white within. The leaves are composed of a multitude of large, broad pinnae; they resemble the leaves of common Parsnep in shape, but they are larger, serrated at the edges, and hairy; the whole leaf is sometimes two feet long, and a foot and a half broad. The stalk is very thick, round, striated, hairy, and ramose; it grows to six feet high. The umbels are very large; the flowers yellow; the seeds large and flat.

It is a native of Italy and Germany. C. Bauhine calls it, *Panax pastinache folio*; Tabernmontanus, *Costum Illyricum*.

It's root is greatly recommended in disorders of the viscera, but it is not used with us at present.

SMYRNIUM.

THE general umbel is unequal, growing larger as it stands; the partial umbels are erect; neither of them has any involucre: the general corolla is uniform: the perianthium is scarce visible: the single flowers consist each of five lanceolated, lightly inflex petals: the stamina are five simple filaments, of the length of the corolla: the antheræ are simple: the germen stands below the cup: the styles are two, and simple: the stigmata are two, and capitated: the fruit is naked, subglobose, striated, and separable into two parts: the seeds are two, biconcave, convex on one side, with three striae, and plane on the other.

1. *Smyrniium foliis omnibus compositis.* Alexanders.
The Smyrniium, with all the leaves composite.

The root is very large, oblong, white, fibrated, and acrid. The leaves are composed of a number of pinnae: the foliola are short, roundish, large, and crenated at the edges; they somewhat resemble the leaves of smallage, but that they are greatly larger. The stalk is round, striated, ramose, and jointed very thick, and six or seven feet high. The flowers are of a greenish-white colour, the umbels very large.

It is a native of England, but is not common with us. C. Bauhine calls it, *Hippocelinum*, five *Smyrniium*.

2. *Smyrniium foliis caulinis simplicibus amplexicaulibus.* Candy
The Smyrniium, with the leaves on the stalk simple, and Alexanders.
surrounding it.

The root is large, oblong, and white; the leaves are very large, and beautiful, they stand on long pedicles, and are themselves a foot long, and three fourths of that in diameter, of a beautiful green colour, and composed of a number of short, broad pinnales. The stalk is round, striated, jointed, ramose, and grows to four feet, or more, in height. The leaves on the stalk are simple, roundish, small, not more than an inch in diameter, of a yellowish green colour, and the stalk grows through them. The umbels are large, the flowers small, and of a whitish-yellow.

It is a native of Crete, and of some of the southern parts of Italy. C. Bauhine calls it, *Smyrnum peregrinum rotundo folio*.

ANETHUM.

THE general umbel is multiple; the partial one is also multiple, and neither has any involucre: the perianthium is scarce visible; the general corolla is uniform: the single flowers consist each of five lanceolated, crooked petals; the stamina are five capillary filaments; the antheræ are roundish: the germen stands under the cup; the styles are two and small; the stigmata obtuse: the fruit is naked, suboval, compressed, and separable into two parts: the seeds are two, suboval, convex, striated on one side, and plane on the other.

This genus comprehends the *Anethum* and *Fœniculum* of authors. In the *Anethum* of authors, the seeds are surrounded with a membranaceous edge; in the *Fœniculum*, they have not this singular character. This is too little, however, to form a generic distinction, when all else agree.

1. *Anethum fructu compresso.*
The compressed-fruited *Anethum*.

Dill.

The root is long, slender, annual, and white; the leaves are divided into a multitude of fine, long, narrow segments, like those of fennel, but of a bluish-green colour, and less strong smell. The stalk is round, striated, ramose, and firm; it grows to four feet high: the umbels are moderately large; the flowers yellow.

It is a native of Spain; we cultivate it in gardens. C. Bauhine calls it, *Anethum hortense*; Dodonæus, *Anethum*.

2. *Anethum fructu ovato.*
Oval-fruited *Anethum*.

Sweet Fennel.

The root is long, large, white, and fibrated; the leaves are divided into a multitude of long, narrow segments, and are of a dark green colour, and strong smell: the stalk is round, thick, green, and four feet high: the umbels are large; the flowers yellow; the seeds broad, oval, of a pale colour, and sweet taste.

It is a native of the South of France. C. Bauhine and others call it, *Fœniculum dulce*. Its seeds are used as carminatives in the shops.

The other species of *Anethum* are, 1. The common, long-seeded *Anethum*, called Fennel. 2. The white-flowered, roundish-seeded *Anethum*. 3. The tortuous-stalked *Anethum*. 4. The tall, long-leaved *Anethum*. 5. The little, long-umbelled *Anethum*. 6. The roundish, umbelled, tall *Anethum*. 7. The little procumbent *Anethum*.

CARUM.

THE general umbel is long, and has ten radii often unequal; the partial umbels are clustered; neither has any involucre: the general corolla is uniform; the perianthia are scarce perceptible: the single flowers consist each of five, obtuse, inflexo-cordate, and nearly equal petals: the stamina are five capillary filaments, of the length of the corolla; the antheræ are roundish, and very small; the germen stands under the cup: the styles are two, and very small; the stigmata are simple; the fruit is naked, ovato-oblong, striated, and separable into two parts: the seeds are two, ovato-oblong, convex on one side, and striated, smooth, and plane on the other.

Of this genus there is but one known species.

CARUM.

Caraway.

The root is a foot long, as thick as a man's thumb, white, acrid, and fibrated. The leaves are placed on long pedicles, hollowed at the base; they are large, and composed of a multitude of pinnules placed at distances, smooth and serrated at the edges: the stalk is slender, but rigid, round, striated, and somewhat ramose; it grows to a foot,

or more, in height : the umbels are moderately large ; the flowers are white, with a cast of reddish.

It is a native of many of the northern parts of Europe, and is cultivated in many other places, for the seed. C. Bauhine calls it, *Cuminum pratense carvi officinarum* ; others simply, *Carvi*. The seeds are warm, carminative, and excellent in flatulents, and other complaints rising from wind.

PIMPINELLA.

THE general umbel is composed of several radii, and the partial ones of yet more numerous ; neither has any involucre. The general corolla is uniform ; the perianthium is scarce visible : the flowers consist each of five inflexo-cordate and nearly equal petals : the stamina are five simple filaments, longer than the corolla : the anthers are roundish ; the germen stands under the cup : the styles are two, and very short ; the stigmata are obtuse ; the fruit is naked, of an oblong, oval figure, and separable into two parts : the seeds are two, oblong, narrower toward the point, convex, striated on one side, and plane on the other.

1. *Pimpinella foliis subrotundis.*

The roundish-leaved Pimpinella.

Burnet

Saxifrage.

The root is white, very long, but slender, and acrid. The radical leaves are simply pinnated ; they consist of two series of pinnae, of a roundish figure, and dusky green colour, crenated round the edges, and arranged on the two sides of a pedicle, terminated by a single pinna. The stalk is slender, round, striated, very ramose, and two feet high : the leaves on it are few, and those divided into five long segments : the flowers are white ; the umbels moderately large.

It is common in dry pastures. C. Bauhine calls it, *Pimpinella Saxifraga major altera* ; Tournefort, *Tragofelinum alterum majus*. What the same authors and others describe also, as another species, under the name of *Pimpinella Saxifraga minor*, and *Tragofelinum minus*, is only a variety of this. The root is used as a diuretic and aperient, and is an ingredient in some compositions.

2. *Pimpinella foliis petiolatis ovatis.*

The Pimpinella, with oval leaves on pedicles.

Great Bur-

net Saxifrage.

The root is oblong, white, thick, and acrid. The leaves are simply pinnated ; each consists of a double row of oblong, oval, lesser leaves, serrated round the edges, and affixed, by moderately long pedicles, to a middle rib terminated by a single one. The stalk is round, hollow, striated, and three feet high : the umbels are large ; the flowers white.

It is wild in England in many places. C. Bauhine calls it, *Saxifraga major umbellæ candida*.

ANISUM.

THE general umbel is thin and plano-patent ; the partial ones are similar ; neither has any involucre : the perianthia are scarce observable : the general corolla is uniform ; the single flowers consist each of five oval, inflex petals : the stamina are five simple filaments ; the anthers are roundish ; the germen stands under the cup : the styles are two, and reflex ; the stigmata are obtuse ; the fruit is naked, of a roundish figure, striated, and separable into two parts : the seeds are two, roundish, convex, striated on one side, and plane on the other.

1. *Anisum foliis radicalibus simplicibus.*

Anisum, with the radical leaves simple.

Anise.

The root is oblong, slender, and white ; the radical leaves stand on long pedicles, and are simple, small, roundish, foliola, crenated at the extremities, smooth, of a pale green, and of a strong smell : the stalk is round, hairy, striated, ramose, and so weak,

weak, that it scarce is able to support itself erect; the leaves on it are narrower, and more deeply cut in all the edges: the umbels are very large; the flowers white.

It is a native of Egypt and Syria, and is sown in Malta for the seed. C. Bauhine calls it, *Anisum herbarius*; the Maltese call it, Sweet Cummin. The seeds are an excellent carminative.

2. *Anisum foliis radicalibus pinnatis.*

The Anise, with the radical leaves pinnated.

Foreign
Parsley.

The root is oblong, single, white, and acrid; the leaves are moderately large and pinnated; they stand on long pedicles, and the pinnæ are smooth, rounded, or oval, and themselves also supported on long pedicles: the stalk is round, firm, slender, ramose, and striated, two feet high, and reddish at the bottom: the leaves on it are composed of longer, narrower, and more serrated pinnæ than the radical ones; the umbels hang down, before the flowers are ready to open, but then they become erect; the flowers are small and white.

It is a native of Germany. C. Bauhine calls it, *Apium peregrinum foliis subrotundis*; Clusius, *Selinum peregrinum*.

A P I U M.

THE general umbel is composed of a great many rays; the partial umbel of fewer; they have neither of them any involucre. The perianthium is scarce visible: the general corolla is uniform: the single flowers consist each of five roundish, inflex, equal petals: the stamina are five simple filaments; the anthers are roundish: the germen stands under the cup; the styles are two, and reflex; the stigmata are obtuse. The fruit is naked, oval, striated, and divisible into two parts: the seeds are two, oval, striated on one side, and plane on the other.

1. *Apium foliis caulinis linearibus.*

The Apium, with the leaves on the stalk linear.

Parsley.

The root is oblong, large, and white. The radical leaves are placed on long pedicles; they are formed of moderately large, broad, and indented pinnæ, of a bright green, and smooth: the stalk is striated, round, ramose, and jointed; it's leaves are greatly different from those of the root, they are narrow and linear; the umbels are small; the flowers white, and very small.

It is a native of Italy and Spain; it is in all our gardens. C. Bauhine calls it, *Apium hortense petroselinum vulgo*.

2. *Apium foliis caulinis cuneiformibus.*

The Apium, with the leaves of the stalk cuneiform.

Small
agr.

The root is long, thick, white, and fibrated: the radical leaves stand on pedicles of four or five inches long, hollowed, striated, and reddish; they are composed of a number of pinnæ, broad, large, divided each into three principal segments, and serrated round the edges: the stalk is round, thick, deeply striated, and hollow: the leaves on it stand on short pedicles, and are cuneiform; at the top of the branches stand small umbels; the flowers are small and white.

It is common in our ditches. C. Bauhine calls it, *Apium palustre*; others, *Eleoselinum* and *Paludopium*. This plant, by culture, becomes what we call Celery, the bleached stalks of which are eaten at our tables.

Æ G O P O D I U M.

THE general umbel is multiple and convex; the partial umbels are multiple and plane; neither has any involucre: the proper perianthium is scarce observable: the general corolla is uniform; the single flowers consist each of five oval, concave, and nearly equal petals: the stamina are five simple filaments; the anthers are roundish: the germen stands under the cup; the styles are two, simple, erect,

and of the length of the corollula; the stigmata are capitated: the fruit is naked, ovato-oblong, striated, and separable into two parts: the seeds are two, ovato-oblong, striated, convex on one side, and plane on the other.

Ægopodium foliis caulinis, summis ternatis.
The Ægopodium, with the upper leaves ternated.

**Sout-
Weed.**

The root is small and creeping; the radical leaves resemble those of angelica; they are composed of a number of oblong and broad pinnae, of a pale green colour, serrated about the edges, and standing at distances from one another. The stalk is round, striated, hollow, and ramose: the upper leaves on it consist only of three lobes, or oblong leaves, like those forming the radical ones: the umbels are moderately large, and convex; the flowers small and white.

It is very common under hedges, and about gardens. C. Bauhine calls it, *Angelica sylvestris minor*, five *Erratica*.

Class the Fifth. Order the Third.

PENTANDRIA TRIGYNIA.

Plants which have in every flower five stamina and three styles.

R H U S.

THE calyx is a perianthium, divided into five segments, acute, erect, and permanent: the corolla consists of five petals, ovato-acuminate, erecto-patent, and twice as large as the cup; the stamina are five scarce visible filaments; the anthers are small, and shorter than the corolla; the germen is roundish, and of the size of the corolla; the styles are scarce visible; the stigmata are three, cordated, and small; the fruit is a berry, coriaceous, roundish, and, having only one cell; the seed is single, roundish, and osseous.

This genus comprehends the *Rhus* and *Toxicodendron* of Tournefort, and the *Vernix* of Kœmpfer. The *Rhus* has a hairy berry, and the kernel is globose. The *Toxicodendron* has the berry smooth, but striated, and the nucleus compressed and sulcated. The *Vernix* has the fructifications on different plants of the same species.

1. *Rhus foliis pinnatis serratis.*
The pinnated, serrated-leaved Rhus.

Sumach.

This is a shrub growing to eight feet high. The root is large and brachiated; the trunk thick, and covered with a brown bark; the young shoots are covered with a paler bark, and are hairy. The leaves are composed of two series, or rows, of pinnae, placed along a middle rib, terminated at the extremity by an odd one; they are oblong, narrow, lightly serrated round the edges, and of a dark green colour. The spikes stand at the tops of the branches, long, thick, hoary, or tomentose, and the flowers are small and purple.

It is a native of Brasil, we have it in our gardens. C. Bauhine calls it, *Rhus angustifolium*, and *Sumach angustifolium*. Its flowers and seeds are astringent.

2. *Rhus foliis ternatis, foliolis obverse-cordatis sessilibus.* **Trifoliolate**
The ternate-leaved Rhus, with obversely-cordated, sessile leaves. **Sumach.**

The root is woody and fibrated. The shrub rises to three, four, or five feet high: the trunk is covered with a brown bark; the young shoots are brittle, and covered with a paler bark. The leaves stand three on a stalk; they are placed each on a pedicle of an inch long, and are of a roundish, but somewhat cordated, figure, at the top, narrower as the bottom, of a deep shining green colour, and smooth. The flowers are very small, and of a yellowish colour.

It is a native of Æthiopia. Commelin calls it, *Vitex trifolia minor* *Indica rotundifolia*; Plukenet, *Rhus Africanum trifoliatum minus glabrum*.

3. *Rhus*

3. *Rhus foliis ternatis, foliolis petiolatis, ovatis, acutis, pubescentibus, integris sinuatisque.*

Poison-
Wood.

The ternate-leaved *Rhus*, with oval, acute, hoary, petiolated leaves, entire and sinuated.

This is a shrub of scarce more than three feet high. The root is woody and brachiated. The leaves stand three together, supported on long, smooth pedicles, and each has also its own pedicle; they are of an oblong figure, broad, approaching to oval; but pointed at the end, usually sinuated, more or less deeply, but sometimes entire, and always more or less hoary. The flowers are small and whitish.

It is a native of Virginia. Tournefort calls it, *Toxicodendron triphyllum folio sinuato pubescente*.

4. *Rhus foliis pinnatis integerrimis.*

The Green-
Tree.

The *Rhus*, with pinnated, undivided leaves.

The root is woody, brachiated and fibrated; the bark is a deep brown and smooth, on the younger branches often reddish. The leaves are composed of a double series of oblong, pointed pinnae, of a dusky green colour, smooth, and even at the edges. The flower is small, the fruit rhomboidal: the whole abounds with a milky, poisonous juice.

It is a native of China, and also of Virginia; we have it in our gardens. Plukenet calls it, *Arbor Americana alatis foliis fusco lacteo venenato*; Kœmpfer calls it, *Sitz vel Sitzdün*; vernith is the produce of it.

The other species are, 1. The elm-leaved *Rhus*. 2. The broader-leaved *Rhus*. 3. The narrower-leaved *Rhus*, smooth on both sides. 4. The smooth, trifoliate *Rhus*, or *Toxicodendron*.

COTINUS.

THE calyx is a short perianthium, divided into five oval, obtuse segments: the corolla consists of five oval petals, scarce any larger than the cup: the stamina are five very minute filaments; the antheræ are small; the germen is triquetrous; the styles are three, and small; the stigmata are obtuse: the fruit is an oval berry, with only one cell; the seed is single, and triangular.

Of this genus there is only one known species. Linnaeus, in his late works, refers it to the *Rhus*, but it is sufficiently distinct.

COTINUS.

This rises to a small tree. Its root is woody, brachiated, and fibrated: the trunk is covered with a brown bark. The leaves are roundish, or oval, and stand singly on long pedicles; they are an inch and a half long, and of a pale green colour; their pedicles are red, and, toward the end of summer, the leaves become red too. The tops of the branches sustain a kind of tuft, formed of an infinite number of hairy, or cirrated, long, complex filaments, together forming a tuft of three or four inches in diameter, and of a purplish colour; the flowers stand in this, and are small, and of a yellowish-green colour, the seeds reddish.

It is a native of Italy. J. Bauhine calls it, *Cotinns*, five *Coccygia*; C. Bauhine, *Cocconileia*, five *Coccygia*.

CASSINE.

THE flowers form a decomposed umbel: the perianthium is very small, thick at the base, divided into five parts, obtuse and permanent: the corolla is formed of a single petal, divided into five suboval, obtuse, patent segments, larger than the cup: the stamina are five subulated, patent filaments, shorter than the corolla: the antheræ are simple; the germen is conic; there is no style; the stigmata are three, reflex and obtuse: the fruit is a roundish berry, with three cells; the seeds are single and oval. Linnaeus has, of late, joined the *maurocoia* to this genus; they are nearly allied, but have distinction enough to keep them properly separate. Dillenius makes this shrub a species of *phylleia*.

MAUROCENIA.

MAUROCENIA.

THE perianthium is small, formed of one leaf, divided into five segments, and permanent: the corolla is formed of a single petal, divided into five oval, patent segments: the stamina are five erect, subulated filaments, longer than the corolla: the antheræ are simple; the germen is conic; the styles are not discernible: the stigmata are three, and gibbous: the fruit is an oval berry, umbilicated with the stigmata: the seeds are three, oblong, and scarce separated by the pulp.

Dillenius makes this shrub a species of frangula.

VIBURNUM.

THE flowers are arranged into an umbel: the perianthium is small, divided into five segments, and permanent: the corolla consists of a single petal, of a campanulated form, erecto-patent, divided into five segments at the edge, which are short, obtuse, and reflex, sometimes cordated: the stamina are five subulated filaments, of the length of the corolla: the antheræ are roundish; the germen is roundish, and placed under the receptacle: there is no style, but, in it's place, a turbinated glandule: the stigmata are three, and obtuse: the fruit is a roundish berry, with one cell: the seed is single, osseous, compressed, and striated.

This genus comprehends the Viburnum, Tinus, and Opulus of Linnaeus's Genera Plantarum.

1. *Viburnum foliis cordatis, acute-crenatis, venosis, subtus tomentosis.*

The Viburnum, with cordated, venous, acutely-crenated leaves, woolly underneath.

The Way-faring Tree.

The root is creeping; the shrub is fifteen or twenty feet high, and very ramose; it's trunk is large, it's branches long and spreading. The leaves stand opposite, in pairs; they are two inches long, nearly as much broad, marked with large veins, deeply crenated round the edges, of a dark green colour on the upper side, and white and cottony underneath. The flowers stand in umbels, of three inches in diameter; they are moderately large, white, and of the smell of elder-flowers: the berries are black, compressed, of a sweetish taste, and viscous.

It is common in our hedges. C. Bauhine calls it, Viburnum; others, Lantana.

2. *Viburnum foliis ovatis integerrimis.*

The Viburnum, with oval, undivided leaves.

Laurustine.

This shrub grows to five or six feet high, and sends out a multitude of branches. The root is woody and cirrated; the stem is covered with a smooth deep brown bark; the young shoots are somewhat quadrangular. The leaves are placed in pairs; they are two inches long, more than an inch broad, of a dark, but shining, green colour, and somewhat oval figure, thick and rigid, and even at the edges; they are green all the year. The flowers stand in umbels, of two inches in diameter; they are moderately large, white, with a tinge of red, and of a sweet smell: the berries are compressed, and of a fine blue colour, when ripe.

It is a native of Italy; we have it very common in gardens. C. Bauhine and others call it *Laurus sylvestris*, and *Tinus*, but they make three species very improperly of it, from the variations in the size of the leaves; Clusius set this on foot, and called them *Tinus primus*, *Tinus secundus*, and *Tinus tertius*; others, *Tinus folio minore*, &c.

3. *Viburnum foliis trilobis dentatis.*

The Viburnum, with trilobate, dentated leaves.

Water Elder.

This is a weak shrub, of six or seven feet high. The stem is an inch or two in diameter; it's bark of a pale grey colour: the branches are long and weak, and usually grow in pairs. The leaves are large, two inches and a half long, as much in breadth, and

and divided into three large, broad lobes; they are smooth, of a pale green colour, and soft to the touch. The flowers stand in large umbels; they are considerably large, and white.

It is common with us about waters. C. Bauhine calls it, *Sambucus aquatica flore simplici*; others, *Opulus*, and *Opulus Ruellii*.

This shrub, by culture, will produce double and globose flowers, and is then called the Gelder Rose.

S A M B U C U S.

THE calyx is a perianthium, formed of one leaf, divided into five segments, small and permanent: the corolla consists of a single petal, of a rotato-concave form, lightly divided into five reflex segments: the stamina are five subulated filaments, of the length of the corolla: the antheræ are roundish; the germen is oval, obtuse, and placed under the receptacle: there is no style, but, in the place of it, a ventricose glandule: the stigmata are three, and obtuse: the fruit is a roundish, unilocular berry; the seeds are three, convex on one side, and angular on the other.

1. *Sambucus caule arboreo ramoso, floribus umbellatis.* Elder.
The branched, woody *Sambucus*, with umbellated flowers.

This grows to a shrub of eight or ten feet high, sometimes more. The trunk is covered with a pale, whitish bark, cracked and uneven: the wood is white and firm: the young shoots are green, full of pith, and tender. The leaves are composed of four, six, or more, pinnae, which are large, oblong, and serrated round the edges, of a deep green colour, and disagreeable smell. The flowers are small and white; they stand in very large umbels: the berries are black.

It is common in our hedges. C. Bauhine calls it, *Sambucus fructu in umbella nigro*; J. Bauhine, *Sambucus vulgaris*.

It varies sometimes with lacinated leaves; sometimes with white berries: authors have described these varieties as distinct species.

2. *Sambucus caule herbaceo simplicissimo.* Dwarf
The herbaceous, simple-stalked *Sambucus*. Elder.

This is merely an herbaceous plant, dying down to the ground every winter. Its root is long, creeping, and of the thickness of a man's finger. The stalk is simple and tender; it grows to three or four feet high, and is green, striated, and thick, full of pith, and much like the green shoots of the common elder: the leaves also greatly resemble those of the elder, but they are composed of longer, and more deeply indented, pinnae; there are three or four series of these, fixed to the two sides of a middle rib, with an odd one at the end: at the top stands an umbel of white flowers, very large and spreading. The berries are angular at first, but they grow round as they ripen. The leaves are of a very disagreeable smell. The flowers have somewhat of the scent of apricot kernels.

It is common in watery places. C. Bauhine calls it, *Sambucus humilis*, five Ebulus; J. Bauhine, *Ebulus*, five *Sambucus herbaces*.

It is esteemed a diuretic and aperient, and is sometimes given in dropsies, jaundices, and obstructions of the viscera.

T A M A R I X.

THE calyx is a perianthium, formed of one leaf, divided into five segments, obtuse, erect, permanent, and of about half the length of the corolla: the corolla consists of five oval, hollow, obtuse, and patent petals: the stamina are five filaments: the antheræ are roundish: the germen is acuminate: there is no style; the stigmata are three, oblong, revolute, and plumose: the fruit is an oblong, acuminate, triquetrous capsule, formed of three valves, containing only one cell, and longer than the cup: the seeds are numerous, very small, and pappose. There is one species of this genus whose flower has ten stamina, all growing together at the base, and the alternate ones shorter.

Tamarix pedunculis nudis, floribus pentandribus.
The naked pedunculed Tamarix, with five stamina in the flower. **Tamarisk.**

This usually grows to but ten or twelve feet high, with the appearance of a shrub; sometimes it is met with much taller, and with all the appearance of a tree. The bark of the trunk is pale brown, and rough; that of the young branches smooth and red. The leaves are very narrow, and somewhat resemble those of the cypress, but are of a paler green colour. The flowers stand in clusters, at the extremities of the branches; they have long, slender, naked pedicles, and are small, of a purplish colour on the outside, before opened, but white within.

It is a native of France and Italy, and grows mostly near the sea. J. Bauhine calls it, *Tamarix major*, five *Arborea Narboneosis*.

STAPHYLÆA.

THE calyx is a perianthium, divided into five roundish, hollow segments; it is nearly of the size of the flower, and is coloured: the corolla consists of five oblong, erect petals, and much resembles the cup: the stamina are five oblong, erect, filaments, of the length of the cup: the antheræ are simple: the germen is thick and tripartite: the styles are three; they are simple, and a little longer than the stamina: the stigmata are obtuse, and contiguous: the fruit is composed of three inflated, flaccid capsules, affixed together longitudinally, by a future pointed at the tops, and opening on the insides: the seeds are two, osseous, subglobose, with oblique points, and an orbicular hole at the side of the apex: in some species the styles are only two, and then the fruit also consists of only two capsules.

1. *Staphylæa foliis pinnatis.*
The pinnated-leaved Staphylæa.

Bladder-nut.

This grows sometimes to the height and bulk of a tree, more usually it is a shrub, ten or fifteen feet high; its bark is dark brown on the trunk; the young shoots are green, and have a large pith. The leaves are pinnated and large; two or three pair of oblong, large, pointed, and crested pinne stand on a stalk, terminated by a single one. The flowers grow, in a verticillate manner, round certain long, pendulous pedicles, the clusters are at a distance from one another; they are small, white with a cast of reddish, before they open, and smell like those of elder; the vesicles are long, large, inflated, and green.

It is a native of England, but not common with us; I have met with it in woods in Kent. J. Bauhine calls it, *Staphylodendron*; others, *Nux vesicaria*.

2. *Staphylæa foliis ternatis, ovato-acuminatis.* **Trifoliolate**
The Staphylæa, with ternate, ovato-acuminated leaves. **Bladder-nut.**

The trunk is large, and covered with a brown bark; the branches are brittle, and greenish. The leaves stand on pedicles, three together; they are two or three inches long, broadest near the base, but running to a long point at the end, and of a pale green colour. The flowers are of a greenish-white colour, small, and in clusters; the fruit is very large, inflated, and of a brownish colour.

It is a native of North America, and has been often sent over from Pennsylvania.

T U R N E R A.

THE calyx is a perianthium, formed of one leaf, of an infundibuliform shape, and deciduous: its tube is cylindraceo-angulated, oblong, and erect: the limb is erect, and divided into five lanceolated segments, of the length of the tube: the corolla consists of five petals, of an obversely-cordated figure, with a point; they are plane, erecto-patent, and have narrow ungues inserted into the tube: the stamina are five subulated filaments, of half the length of the corolla, and inserted into the cup: the antheræ are acuminate and erect: the germen is conic; the styles are three, filiform,

form, and of the length of the stamina: the stigma is capillaceo-multifide: the fruit is an oval capsule, with one cell, formed of three valves: the receptacles are linear, and are annexed longitudinally to the valves: the seeds are numerous, oblong, and obtuse.

It is an American, described by Plumier.

TELEPHIUM.

THE perianthium consists of five oblong, obtuse, permanent leaves, of the length of the corolla: the corolla consists of five erect, oblong, obtuse petals, narrowest at the base: the stamina are five subulated filaments, shorter than the corolla; the antheræ are incumbent; the germen is triquetrous and acute: there are no styles, but the stigmata are three, acute and patent: the fruit is a short, triquetrous capsule, formed of three valves, and having only one cell; the receptacle is free, and of about half the length of the capsule: the seeds are numerous and roundish.

Of this genus there is only one species; it is called by many authors a species of *Cistus*.

TELEPHIUM.

The root is three or four inches long, and as thick as one's finger, yellowish on the outside, white within, hard, perennial, and furnished with a few long and thick fibres. The radical leaves are oblong and narrow; the stalks are numerous and procumbent, or, at best, but oblique; they are six or eight inches long, round, slender, and green: the leaves stand alternately on them; they are small, of an oblong figure, approaching to an oval, about half an inch in length, and of a yellowish green. The flowers stand in long clusters, at the extremities of the branches, and the ends of the cluster turn back; they are white and small.

It is a native of France. Imperatus calls it, *Telephium legitimum*; C. Bauhine, *Telephium repens folio non deciduo*. Morison makes it a species of polygonum. Authors have made other species out of the varieties of this plant, and have described some others as of this genus, which belong to others.

CORRIGIOLA.

THE perianthium consists of five oval, concave, patent, permanent leaves, of the size of the corolla: the corolla consists of five oval, patent petals: the stamina are five small, simple filaments: the antheræ are simple; the germen is ovated and trigonal; there are no styles; the stigmata are three, and obtuse: there is no fruit but the calyx, which, closing, serves in the place of one: the seed is single, and ovato-triquetrous.

Of this genus there is only one known species.

CORRIGIOLA.

The root is oblong and slender; the radical leaves are oblong, narrow, and pointed. The stalks are numerous and procumbent; they are four or five inches long, round, slender, and ramose; the leaves on these are shorter than the radical ones, and resemble those of the smaller knot-grass; they stand closely and irregularly, and are of a bluish-green colour; at the tops of the stalks stand spiked, thick clusters of flowers; they are small, reddish, before they open, afterwards white; before the spikes have flowered all over, their ends are turned back.

It is a native of France and Germany. Ray calls it, *Polygoni-folia per terram sparsa flore scorpioidis*; Parkinson, *Polygonum minus Montpeliense*.

HOLOSTEUM.

THE perianthium is permanent, and composed of five leaves: the corolla is composed of five petals, broadest toward the ends, plane, patent, and tridentated: the stamina are five simple filaments: the antheræ are roundish; the germen is oval; the styles are three, and repandous; the stigmata are simple: the fruit is a cylindraceo-conic capsule, with one cell; the receptacle is free, obsoletely trigonal, and has very short hairs, which serve to fix the seeds: the seeds are numerous, and triquetrous: there is a species of this genus in which the stamina, and other parts, are only four, instead of five.

PHARNACEUM.

PHARNACEUM.

THE calyx is a perianthium, formed of five suboval, concave, patent, equal, and permanent leaves: there is no corolla, but the calyx resembles one, being coloured on the inside, and it's edges very thin: the stamina are five subulated filaments, of the length of the cup: the antheræ are hid at the base; the germen is oval and trigonal; the styles are three, and of the length of the stamina: the stigmata are obtuse: the fruit is an oval capsule, obscurely trigonal, in part covered by the cup; it is formed of three valves, and contains three cells: the seeds are numerous, nitid, orbiculated, depressed, and surrounded with a margin.

BASELLA.

THE Basella has no calyx; the corolla is composed of a single leaf, deeply divided into six segments, the two opposite ones being broader than the others, and, finally, it becomes baccated: the stamina are five slender filaments: the antheræ are small; the germen is roundish; the styles are three, and short; the stigmata are simple; the seed is single.

These characters sufficiently distinguish the Basella from all the plants of this class, without a farther description.

Class the Fifth. Order the Fourth.

PENTANDRIA TETRAGYNIA.

Plants which have in each flower five stamina and four styles.

Of this Order there is only one Genus, and of that Genus only one known species.

PARNASSIA.

THE calyx is a perianthium, divided into five oblong, acute, patent, and permanent segments; the corolla consists of five roundish, emarginated, striated, hollowed, and patent petals; the nectaria are five; each is composed of a cordated squama, hollowed, and furnished round it's edge with thirteen filaments, gradually taller, and each having a globular body at it's head: the stamina are five subulated filaments, of the length of the corolla: the antheræ are depressed and incumbent; the germen is oval and large; there are no styles; the stigmata are four, obtuse and permanent; the fruit is a capsule of a tetragono-oval figure, formed of four valves, containing one cell, and having a quadruple receptacle affixed to the valves; the seeds are numerous and oblong.

PARNASSIA.

The root is fibrous, of a reddish-white colour, and astringent, and of a somewhat acrid taste: the radical leaves stand singly on long pedicles; they are roundish, cordated at the base, and terminate in a point, of a pale green colour, smooth, and about half an inch in diameter. The stalks are numerous; they are slender, angulated, and grow to six or seven inches high; each has one leaf, near it's bottom, surrounding it at the base, and like the radical ones; at it's top stands a single, large, beautiful, white flower.

We have it in many boggy places in England. Tournefort calls it, *Parnassia vulgaris et palustris*; others, *Græmen Parnassii*.

Class

Class the Fifth. Order the Fifth.

PENTANDRIA PENTAGYNIA.

Plants which have in every flower five stamina, and five styles, or stigmata.

ARALIA.

THE flowers of the Aralia are collected into an umbel of a globose figure, with a very small involucre: the perianthium is very small, divided into five parts, and placed on the germen: the corolla consists of five ovato-acute, sessile, reflex petals: the stamina are five subulated filaments, of the length of the corolla: the antheræ are roundish; the germen is roundish; the styles are five, very short, and permanent; the stigmata are simple; the fruit is a roundish, coronated, striated berry, having five cells; the seeds are single, hard, and oblong.

Aralia caule foliis inermi.

The Aralia, with a weak, foliose stalk.

**Berry-bearing
Angelica.**

The root is whitish, a foot long, and an inch in diameter. The stalk is round, thick, jointed, ramose, of a purplish colour, oftener than green, filled with a white pith, and five or six feet high. The leaves are very large, and composed of a number of large, oval, and acuminate pinnae, placed at distances, and are of a dusky green, and serrated at the edges. The umbels are small, and rise from the axis of the leaves; the flowers are small, greenish at first, and afterwards white. The berries are large, red, and extremely sweet to the taste.

It is a native of North America. Tournefort calls it, *Aralia Canadensis*; Ray and others, *Angelica baccifera*.

BARRERIA.

THE calyx is a perianthium, formed of one leaf, of a turbinate figure, erect, divided into five slight segments at the edge, and permanent: the corolla is composed of five oval petals, with very long, filiform unguis: the stamina are five subulated filaments, longer than the cup: the antheræ are simple: the germen is rude, immersed in the cup, and quinquifid: the styles are five; they are filiform, and of the length of the stamina: the stigmata are obtuse.

STATICE.

THE common perianthium is of a very different figure in the different species: the proper perianthium is formed of one leaf, of an infundibuliform shape: the tube is narrow, the limb entire, not plicated: the corolla is infundibuliform; it is formed of five petals, narrow at the bottom, broad and obtuse at the top, and patent: the stamina are five subulated filaments, shorter than the corolla: the antheræ are incumbent: the germen is extremely small: the styles are five, filiform and distant: the stigmata are acute: there is no pericarpium: the cup becomes constringed about the neck, and it's limb is expanded; and in this state it retains the seed, which is single, very small, and roundish.

This genus comprehends the Statice and the Limonium of authors. The Statice of authors has a common triple cup, and the flowers are arranged into a roundish head. The Limonium of authors has a common, imbricated cup, and the flowers are arranged into oblong series. There is a species in which the corolla is monopetalous, but this is not a generical distinction; in the others the stamina adhere to the unguis of the petals.

Plants of the 1. order
which are in the 2. order
of the 3. order 4 Y

1. Statice

1. *Statice caule nudo simplicissimo capitato.*

The simple and naked stalked Statice, with a capitated head. Thrift.

The root is thick, oblong, and fibrated. The radical leaves are three or four inches long, narrow, grassy in appearance, and pointed at the ends; they are of a dusky green colour, and grow in great tufts. The stalks are numerous; they are round, five or six inches high, naked, and, at the top, have a roundish head, or cluster of flowers, of the bigness of a nutmeg. The flowers are of a pale red colour, and moderately large.

It is common on our sea-coasts, and in some places sufficiently distant from sea; we have it also frequent in gardens. Tournefort and others call it, Statice; C. Bauhine, Caryophyllus maritimus, or Montanus flore globoso; Morison, Limonium flore globoso. It grows sometimes larger, sometimes smaller, and authors have very injudiciously made two species of it.

2. *Statice caule nudo ramofo.*

The Statice, with a naked, ramofo stalk. Common Sea Lavender.

The root is oblong, divaricated, and of a reddish colour. The radical leaves are two or three inches long, and an inch and a half broad, broadest in the middle, pointed at the end, and affixed to long pedicles. The stalk is round, robust, naked, ramofo, and a foot, or more, in height; the ramifications of the top of it bend backward, and stand very separate from one another; they are all along ornamented with a series of flowers, of a beautiful pale blue colour, and small.

It is very frequent on our sea-coasts. C. Bauhine calls it, Limonium maritimum majus; others, Limonium vulgatus.

3. *Statice foliis lanceolatis mucronatis radicalibus, caule ancipiti dichotomo, stipulis simplicibus.*

The lanceolated, mucronated, radical-leaved Statice, with stalks alated, and simple stipule.

The root is oblong, thick, and reddish; the leaves are numerous, oblong, of a bright green colour, large and broad, and terminate in a point that is rigid and prickly; they are in part erect, and in part lie on the ground. The stalk is round, ramofo a foot high, and alated on each side by a stiff membrane. The flowers are very numerous, large, and form a kind of umbels; they are of a fine silvery white colour, with sometimes a little tinge of blue among it; the whole cluster of them, as there are usually a great number together, makes an extremely beautiful appearance.

It is a native of Greece, and of some parts of Europe. Ray calls it, Limonium flocculis elegantissimis; Tournefort, Limonium orientale plantaginifolio floribus umbellatis. The common Limonium varies extremely in it's manner of growth, as well as size, and from these varieties many imaginary species have been made by too many authors, such as Limonium minus, Limonium minimum, and the like.

The more certainly distinct species, beside these, are, 1. The decurrent-leaved Statice, or Rawwolf's elegant Limonium. 2. The dairy-leaved Statice. 3. The cordated-leaved Statice. 4. The asplenium-leaved Statice. 5. The reticulated-leaved Statice. 6. The auricula-leaved Statice. 7. The hairy-leaved Statice. 8. The plantain-leaved Statice. 9. The multi-fid-leaved Statice. 10. The scorzonera-leaved Statice. 11. The shrubby, great-flowered, grassy Statice. 12. The capillaceous-leaved Statice. 13. The basil-leaved Statice. 14. The juniper-leaved Statice. 15. The purple, short-stalked Statice. 16. The spiked, narrow-leaved Statice. 17. The shrubby Statice, with narrow, prickly leaves.

L I N U M.

THE calyx is a permanent perianthium, formed of five small, erect, acute, lanceolated leaves: the corolla is of an infundibuliform shape; it is composed of five oblong petals, broad and obtuse at the top, large and patent: the stamina are five erect,

erect, fabulated filaments, of the length of the cup: the antheræ are simple, and sagittate; the germen is oval; the styles are five, filiform, erect, and of the length of the stamina: the stigmata are simple and reflex: the fruit is a globose, somewhat pentagonal and, pointed capsule; it is formed of five valves, and contains ten cells: the seeds are single, ovate, flattish, smooth, and pointed.

This genus comprehends the *Linum*, *Radiola*, *Chamælinum*, and *Linocarpon* of authors. In one of the species, the stamina and petals are only four. Authors have made a new genus of this; but, as every thing else agrees, this is not allowable.

1. *Linum foliis alternis lanceolatis integerrimis, calycibus acuminatis angulatis, capsulis mucronatis.*

Flax.

The lanceolated, alternate-leaved Linum, with angular cups, and pointed capsules.

The root is oblong and slender; the stalk erect, round, hollow, simple, and three feet high, smooth, and divided at the top into three or four branches. The leaves stand closely and irregularly on it; they are two inches long, of the breadth of a straw, and of a pale green, smooth even at the edges, and pointed at the ends; the flowers are large and blue.

It is cultivated in almost all parts of Europe. We meet with it also wild, or from seeds casually dropped; and authors have made this another species, under the name of *Linum sylvestre*. Boerhaave also describes what he calls a *Linum fativum homilius flore magno*; and Tournefort, a *Linum fativum latifolium Africanum fructu majori*, both which are varieties only of this species.

2. *Linum caule dicotomo, foliis ovato-lanceolatis, corollis acutis.*

**Purging
Flax.**

The dichotomous-stalked Linum, with ovato-lanceolate leaves, and acute corollæ.

The root is very small, oblong, and woody; the stalks are procumbent at bottom, for two or three inches; thence they rise erect, to six or seven inches high; they are very slender, round, and toward the top divided into many branches. The leaves are very small, of an oval figure, but pointed at the ends; they have no pedicles, and are of a dusky green; the flowers stand singly on slender pedicles; they are moderately large and white.

The plant is common with us in dry pastures. C. Bauhine calls it, *Linum pratense flosculis exiguis*; others, *Linum catharticum*. A decoction of the whole plant is a very rough purge, much used among the country people.

3. *Linum caule dicotomo, floribus tetrandris tetragynis.*

**The least Rupture-
wort, or All-seed.**

The dichotomous-stalked Linum, with four stamina, and four pistils in each flower.

The root is very small and oblong; the stalk is round, slender, and very ramose: the plant grows to about an inch and a half high; the branches are usually reddish; the leaves stand in pairs; they are extremely small, of a somewhat oval figure, and have no pedicles: the flowers are very minute, and white; the seed-vessels large: the plant often expands into a kind of round tuft, and it's whole superficies seems covered with flowers and seed-vessels.

We have it in dry places not unfrequently. Ray calls it, *Radiola vulgaris serpyllifolia*; C. Bauhine, *Polygonum minimum*, five *Millegrana minima*; Vaillant; *Chamælinum vulgare*; Micheli, *Linocarpon serpyllifolium multicaule*.

The other species are, 1. The perennial, large-flowered *Linum*. 2. The small-headed *Linum*. 3. The broad-leaved, hairy *Linum*. 4. The shrubby, white-flowered *Linum*. 5. The narrow-leaved, yellow-flowered *Linum*. 6. The roundish-leaved, yellow *Linum*. 7. The broad-leaved, yellow *Linum*, flowering at the joints. 8. The shrubby, yellow *Linum*. 9. The narrow-leaved, procumbent *Linum*.

num. 10. The rough-leaved, yellow Linum. 11. The rigid, aculeated-leaved, yellow, shrubby Linum. 12. The larix-leaved Linum. 13. The red-flowered, hairy Linum.

DROSERA.

THE calyx is a one-leaved perianthium, divided into five segments, erect, acute, and permanent: the corolla is infundibuliform; it is composed of five suboval, obtuse petals, and is somewhat larger than the cup: the stamina are five subulated filaments, of the length of the cup: the antheræ are small; the germen is roundish; the styles are five, simple, and of the length of the stamina; the stigmata are simple; the fruit is a suboval capsule, containing only one cell, and opening into five parts at the top; the seeds are numerous, very small, and oval.

This genus comprehends the *Ros folis*, or *Rorella* of authors.

1. *Drosera scapis radicata, foliis orbiculatis.*

The radicated-stalked Drosera, with roundish leaves.

Sun=
dry.

The root is small and fibrous; the leaves are roundish, a sixth of an inch in diameter, sometimes larger; usually hollow, of a reddish colour, and affixed to long pedicles: the upper surface of the leaf is surrounded with long reddish filaments, and has some shorter in its middle: the upper surface of the pedicle is also furnished with such; the under side of both is smooth; there are drops of a clear fluid constantly standing on the surfaces of these leaves in the hottest weather: the stalk is round, slender, naked, and three or four inches high: the flowers are moderately large and white; they stand in a long series at the top of the stalk, all one way, and each on its own separate pedicle.

It is common in boggy places. C. Bauhine calls it, *Ros folis folio rotundo*.

2. *Drosera scapis radicata, foliis oblongis.*

The Drosera, with radicated stalks, and oblong leaves.

The root is small and fibrous; the stalk naked, six or eight inches high, and the flowers larger than in the former species, and of a beautiful white; they stand in a series on the top of the stalk, and have shorter pedicles than those of the former species. The leaves are an inch and a half long, including the pedicle, which by degrees dilates into the form of the leaf, and is covered, as in the former, with reddish hairs, and with drops of a clear fluid.

It is common on our bogs. C. Bauhine calls it, *Ros folis folio oblongo*. Authors have described other species, as they call them, also differing in size, under the names of larger and smaller *Rorellæ*. I have given the second a place, as a distinct species, in compliance to Linnæus, who makes it such, and who is not apt to swell the number of species unnecessarily: but I am apt to suspect, as he also seems to do, that it is only a variety of the common, round-leaved kind.

CRASSULA.

THE calyx is a perianthium, formed of five lanceolated, hollowed, acute, erect, and permanent leaves, which meet in such a manner, as to form a kind of tube. The corolla is of the infundibuliform shape; it is composed of five petals, the ungues of which are very long, linear, strait, connivent, and joined at their bases, and the bractæ, which form the limb, oval and reflexo-patent. The nectaria are five very small, emarginated squamæ, annexed outwardly to the base of the germen: the stamina are five subulated filaments, of the length of the tube, and inserted into the ungues of the corolla: the antheræ are simple; the germina are five, oblong, acuminate, and terminated by subulated styles, of the length of the stamina; the stigmata are obtuse: the fruit is composed of five oblong, acuminate, strait, compressed capsules, opening longitudinally inwards: the seeds are numerous and small. The corolla has sometimes only four segments.

Crassula

Crassula caule dichotomo, foliis linearibus, floribus quadrifidis.
The dichotomous-stalked, linear-leaved Crassula, with quadrifid flowers.

The root is composed of a multitude of white, moderately thick fibres; the stalks are round, thick, succulent, and often purplish; they are divided toward the tops into two, and these into two more each, and so on to the extremities, the division always being thus: the leaves are very small, narrow, and obtuse; the flowers moderately large, and of a beautiful red.

It is frequent in France and Germany. Vaillant calls it, *Sedum minimum annuum flore tetrapetalo*.

SURIANA.

THE calyx is a permanent perianthium, composed of five lanceolated, acuminate leaves: the corolla consists of five petals, obversely ovate, patent, and of the length of the cup: the stamina are five filiform filaments, shorter than the corolla; the anthers are simple: the germina are five, and roundish; the styles are foliary, filiform, erect, of the length of the stamina, and inserted into the middle of the interior side of the germen; the stigmata are obtuse; there is no pericarpium, except the crusts of the seeds: the seeds are five in number, and roundish.

It is a native of South America, and is described by Plumier.

SIBALDIA.

THE calyx is a permanent perianthium, composed of a single leaf, slightly divided into ten segments, which are equal, patent, semi-lanceolate, and alternately narrower and broader: the corolla is smaller than the cup; it consists of five oval petals, inserted into the cup under it's segments: the stamina are five capillary filaments, inserted into the cup, and shorter than the corolla; the anthers are small and obtuse; the germina are five, oval and very short; the styles are of the length of the stamina, and arise from the sides of the germen; the stigmata are capitated; there is no pericarpium. The cup closes at top, and in it's bottom holds the seeds, which are oblong, and five in number: the pistils are sometimes duplicate in the same plants, in which, in other flowers, they are quinate.

Sibaldia foliis tridentatis.
The tridentated-leaved Sibbaldia.

**Trifid Penta-
 phylloides.**

The root is woody, oblong, and perennial; the stalks are round, rigid, procumbent, and often get within the surface: the leaves stand in clusters, about the tops of the stalks; they have each a brown, oblong, membranaceous base surrounding the stalk, semi-bifid and acute; from this division grows a pedicle half an inch long, erect, slender, a little hairy, and at it's summit stand three leaves; these are vertically ovate, but with the apex cut off, hairy on both surfaces, a third of an inch in length, and terminated at the extremity by three acute denticulations: the flowers stand usually four together, on a pedicle of half an inch long; they are yellow.

It is frequent in the North of England, and in Denmark, Sweden, and Lapland. Sibbald, from whom Linnæus has named it, calls it, *Fragaria sylvestris affinis planta flore luteo*; Ray calls it, *Pentaphylloides pumila foliis ternis trifidis*.

Class the Fifth. Order the Sixth.

PENTANDRIA POLYGYNIA.

Plants which have in each flower five stamina, and very numerous styles.

Of this order there is only one genus, and of that but one known species.

MYOSUROS.

THE calyx is a deciduous perianthium, composed of five semi-lanceolate, obtuse, reflex, coloured leaves, joined on above the base: the corolla is considerably smaller than the calyx; it consists of five extremely minute petals, and is tubulated at the base, and opens obliquely inwards: the stamina are five filaments, of the length of the cup; the anthers are erect and oblong; the germina are very numerous, and are placed on the receptacle in form of a conic, oblong cluster; there are no styles: the stigmata are simple; there is no pericarpium: the receptacle is extremely long, styliform, and covered with seeds, laid in an imbricated manner: the seeds are numerous, oblong, and acuminate.

This genus has a great affinity with the *Ranunculus*, but cannot be joined with it. The number of the stamina is not certain, but varies considerably in the different plants.

MYOSUROS.

House-tail.

The root is composed of a number of white, slender fibres; the leaves are very numerous, three inches long, very narrow, of a deep green, and somewhat broader toward the ends than at the base: the stalks are simple, two inches high, round, green, and slender: the flower is of a greenish colour; the anthers are yellow: the receptacle is a green, cylindric body, two inches long, thicker than the stalk, and beautifully imbricated in its structure.

It is common with us among corn, and in dry pastures. C. Bauhine calls it, *Myosuros*; Dodonæus, *Cauda murina*.

Class the Sixth.

HEXANDRIA.

Plants which have in every flower six stamina.

Of these some have only one style, some have two, some three, some four, some six, and some a great number in each flower; according to these distinguishing characters, they are to be arranged into six orders.

Order the First.

HEXANDRIA MONOGYNIA.

Plants which have in each flower six stamina, and only one style.

THE genera of this order are very numerous, and may be arranged, according to certain obvious and invariable distinctions, into five several divisions. Some of them having, 1. Calyculated flowers, divided into three segments. 2. Others having a monophyllous spathe. 3. Others having flowers composed of six petals, and naked. 4. Others having flowers consisting only of one petal, and naked; and, 5. Others having flowers not divided into three segments, yet having cups to them.

*Class the Sixth. Order the First.**Division the First.**Hexandria Monogynia, having corollæ divided into three segments, and cups to them.***BROMELIA.****Pine-apple.**

THE calyx is a small trigonal perianthium, divided into three oval segments, placed on the germen, and permanent. The corolla consists of three narrow, lanceolate, erect petals, much longer than the cup: the nectarium is connivent, and affixed to every petal above it's base: the stamina are six subulated filaments, shorter than the corolla, and inserted into the cup: the antheræ are erect, and sagittated; the germen stands below the cup; the style is simple and filiform, of the length of the stamina; the stigma is obtuse and trifid: the fruit is a large, roundish, umbilicated berry: the seeds are numerous, incumbent, oblong, and obtuse.

This genus comprehends the *Pinguin* of Dillenius, the *Ananas* of Tournefort, and the *Karotas* of Plumier, the pine-apples of our stores.

TILLANDSIA.

THE calyx is an oblong, tripartite, erect, permanent perianthium, formed of one leaf; the segments are oblong, lanceolated, and acuminate: the corolla is composed of a single petal, and is tubulated: the tube is long and ventricose; the limb is small, erect, trifid, and obtuse: the stamina are six filaments, of the length of the tube of the corolla, and adhere longitudinally to the petal: the antheræ are erect and acute, and are placed in the neck of the corolla: the germen is oblong, and pointed at each end; the style is filiform, and of the length of the stamina; the stigma is trifid and obtuse: the fruit is a long, obtusely, trigonal, acuminate capsule, formed of three valves, but containing only one cell: the seeds are numerous, and are affixed to a long capillary plume.

This genus comprehends the *Caraguata* of Plumier.

RENEALMIA.

THE calyx is a deciduous perianthium, composed of three coloured, oval, erect, hollow leaves: the corolla is long, erect, and of the infundibuliform kind; the tube is of the length of the calyx; the limb is short, plane, and divided into three segments: the stamina are six short membranaceous filaments, inserted into the corolla: the antheræ are sagittated; the germen is ovato-oblong, rounded, pointed at the end, marked with three furrows formed of three valves, and contains three cells. The seeds are numerous, oblong, and have each a capillary plume. It is a native of South America, described by Plumier.

BURMANNIA.

THE calyx is a perianthium, formed of a single leaf, long, cylindric, coloured, and edged longitudinally with a triple, membranaceous ala. The mouth is small, and divided into three segments: the corolla is very small; it consists of three extremely minute, oval, oblong petals, placed in the mouth of the cup: the stamina are six scarce visible filaments: the antheræ are very short; they stand in the mouth of the cup, two together, and are crooked at the extremity: the germen is cylindric, and of about half the length of the cup; the style is filiform, and of the length of the corolla; the stigma are three, obtuse and hollow: the pericarpium is an involuted capsule, of a cylindraceo-trigonal figure, formed of three valves, containing three cells, and opening at the angles: the seeds are numerous and small.

It is a native of Ceylon, and is figured in Burman's *Thesaurus* 20. 1.

TRADES-

TRADESCANTIA.

THE flowers are arranged into an irregular umbel, and have an irregular spathaceous involucre. The perianthium is formed of three oval, concave, patent, permanent leaves: the corolla consists of three petals; they are very large, orbiculated, plane; and patent; the stamina are six, filiform, hairy filaments, erect, and of the length of the cup; the antheræ are reniform: the germen is oval, and obtusely trigonal; the style is filiform, and of the length of the stamina; the stigma is trigonal and obtuse. The fruit is an oval capsule, covered by the cup, formed of three valves, and containing three cells: the seeds are few in number, and angular.

Of this genus there is only one known species.

TRADESCANTIA.

Virginian Spider-woof.

The root is fibrous, and spreads every way under the surface. The radical leaves are very numerous; they grow in clusters of three or four together, surrounding one another at the base; they are two feet long, and scarce half an inch broad, grassy in appearance, and gradually growing smaller from the base to the point. The stalk is round, thick, green, jointed, and usually simple, sometimes ramose: the leaves stand singly at the joints, except at the top, where there grow two; from the center of these grows a cluster of flowers, ten or fifteen in number. They are large, beautiful, and fading; their colour is a deep blue, sometimes red, sometimes white; the flowers that open in the morning close and fade at night, but there is a long succession of new ones.

It is a native of Virginia. C. Bauhine calls it, *Allium five Moly Virginianum*; others, *Phalangium Virginianum*, and *Ephemereum Virginianum*.

Class the Sixth. Order the First.

Division the Second.

Hexandria Monogynia, with a spathe composed of a single leaf.

GALANTHUS.

THE calyx is an oblong, obtuse, compressed spathe, opening on the flat side, and fading: the corolla consists of three oblong, obtuse, lax, hollow, patulous petals, equal in size: the nectarium is cylindric, and is formed of three parallel, obtuse, emarginated leaves, of half the length of the petals: the stamina are six very short, capillary filaments; the antheræ are oblong, acuminate, connivent, and terminate in setæ or hairs: the germen is globose, and placed under the cup; the style is filiform, and longer than the stamina; the stigma is simple: the fruit is a capsule of a globo-ovoid figure, obtusely trigonal, formed of three valves, and containing three cells: the seeds are numerous and globose.

Of this genus there is only one known species, and this is usually called *Narcissico-leucoium*.

GALANTHUS.

The Snow-Drop.

The root is a small bulb, composed of a multitude of coats; the colour black on the outside, but white within, and furnished with a multitude of fibres from the base: the stalk and leaves rise from the root in a cluster, surrounded to a considerable height, with a membrane; the stalk is slender, angular, hollow, green, and three or four inches high; two leaves accompany the stalk usually, almost to its top; they are narrow, long, grassy, and of a bluish or greyish green; the top of the stalk furnishes a drooping pedicle, on which hangs a large snow-white flower.

It is a native of the Alps and Apennines; we have it in our gardens almost every where, flowering early in spring. C. Bauhine calls it, *Leucoium bulbosum trifolium minus*; Lobel, *Leuconarcisso-lirion minimum*; and Renalm, *Brangelia*.

LEUCOIMUM.

LEUCOIUM.

THE calyx is an oblong, obtuse spatha, compressed, bursting sideways, and deciduous. The corolla is of a rounded shape, and patent, divided into six plain, oval petals, almost from the very base, and with their tops somewhat thicker and narrower than the middles. The stamina are six very short, setaceous filaments: the antheræ are oblong, obtuse, quadrangular, erect, and distant; the germen is roundish, and stands under the receptacle; the style is thickest upward and obtuse; the stigma is setaceous, erect, acute, and longer than the stamina: the fruit is a turbinate capsule, formed of three valves, and containing three cells: the seeds are numerous and roundish.

Of this genus there is also only one species, and this is usually distinguished only from the former genus as another species, larger than that. Some have indeed observed the difference in the flower, but they have still called it by the same name.

LEUCOIUM.

The great Snow-Drop.

The root is a tunicated bulb, brown on the outside, white within, and fibrated at the base. The leaves are six inches long, and a third of an inch broad, of a bright green, and of a glossy surface; there are usually, from three to six of them, together: the stalk is six inches high, green, hollow, angular, and striated; it is inclosed with the leaves in a membrane, to two inches high; it has no leaf on it, and has at it's top a long drooping pedicle sometimes, but rarely two or three: the flower is large, and of a beautiful white, marked with a green spot externally: the antheræ are yellow.

It is a native of Italy and Germany; we have it in our gardens. C. Bauhine calls it, *Leucoium bulbosum vulgare*; Dodonæus, *Leucoium bulbosum hexaphyllum*.

NARCISsus.

THE calyx is an oblong, obtuse, compressed spatha, opening on one side, and deciduous. The corolla consists of a nectarium, formed of one leaf, of a cylindric or infundibuliform shape, coloured at the top, and wide, curled and plicated at the mouth; and of six oval, acuminate, plane petals, affixed externally to the tube of the nectarium above it's base. The stamina are six subulated filaments, shorter than the nectarium; the antheræ are oblong: the germen is roundish, but obscurely triquetrous, and stands under the cup: the style is filiform, and longer than the stamina; the stigma is trifid, hollow, and obtuse. The fruit is a roundish, obtusely, trigonal capsule, formed of three valves, and containing three cells, in which are a number of round, appendiculated seeds, with a columnar receptacle.

1. *Narcissus scapo unifloro, nectarii limbo rotato revivissimo.*

The single-flowered Narcissus, with the limb of the nectarium very short and rotated.

Purple-rim=
med Daffodil.

The root is a tunicated bulb, fibrated at the base; the leaves are twelve or fifteen inches long, half an inch broad, and of a pale bluish-green; the stalk is single, naked, and fifteen inches high, green, flattened, angulated, striated, and hollow; at it's top stands a single flower, very fragrant and beautiful; it is white, but the tubular part has a crimson edge, below which is a white circle, and under that a yellow one.

It is a native of Italy, and some parts of France. C. Bauhine calls it, *Narcissus albus circulo purpureo*; Dodonæus, *Narcissus medio-purpureus*.

2. *Narcissus scapo unifloro, nectarii limbo campanulato, erecto, petala equante.*

The single-flowered *Narcissus*, with the limb of the nectarium campanulated, erect, and equal with the petals.

Wild Daffodil.

The root is a moderately large, tunicated bulb; the leaves are a foot long, a third of an inch broad, of a bluish-green colour, striated, and ribbed on each side; four or five of these rise with the stalk, and accompany it to the top, without separating from it. The stalk is a foot high, green, hollow, striated, and has at it's top a single and very large flower, two inches long; the petals of a pale yellow colour; and the nectarium or tube very large, and of a gold colour.

It is a native of England. Dodonæus calls it, *Narcissus luteus sylvestris*; others, *Pseudo-Narcissus Anglicus*.

3. *Narcissus scapo multifloro, nectario campanulato, foliis planis ensiformibus.*

The many-flowered *Narcissus*, with a campanulated nectarium, and plane ensiform leaves.

Many-flowered Daffodil.

The root is a large, tunicated, and fibrated bulb, blackish on the outside, and white within: the leaves are ten inches long, half an inch broad, flat, smooth, and edged like a sword: the stalk is naked, hollow, green, striated, and a foot high; at it's top stand ten or twelve flowers, moderately large, and of a disagreeable smell: the petals are usually white, sometimes a little yellowish; the nectarium of a strong yellow.

It is a native of the coasts of Spain and Italy. C. Bauhine calls it, *Narcissus medio-luteus copiosiore flore odore gravi*.

4. *Narcissus scapo multifloro, nectario campanulato, brevi, foliis subulatis.*

The many-flowered *Narcissus*, with a short, campanulated nectarium, and subulated leaves.

The Jonquille.

The root is a tunicated bulb, brown on the outside, white within, and fibrated; the leaves are a foot long; there usually arise only two of them from the root: they are of the thickness of a small packthread at the base, and gradually smaller to the point; they look round, but are, when examined, furrowed along the middle: the stalk is round, slender, a foot high, and green; the flower stands sometimes single; sometimes there are two on the stalk, sometimes more: the tube is long; the petals small; the opening of the nectarium sinuated; the whole flower is of a beautiful yellow, and a very sweet smell.

It is a native of Spain and Italy. C. Bauhine calls it, *Narcissus juncifolius luteus minor*.

The varieties of these four species of *Narcissus* are almost innumerable; they are principally owing to culture, and consist in the multiplicity of petals, and size and colour of the corolla. Tournefort fills four or five pages, with the names of them, recounting them as species.

PANCRATIUM.

THE calyx is an oblong, obtuse, compressed spatula, opening in the plane side, and deciduous: the nectarium of the corolla is formed of a single leaf, of a cylindraceo-infundibuliform shape, coloured at top, and with an open mouth divided into ten segments: the petals are six, lanceolated and plane, and are inserted externally into the tube of the nectarium above the base: the stamina are six subulated filaments, affixed to the apex of the nectarium; the antheræ are oblong and incumbent; the germen is obtusely trigonal, and placed under the receptacle: the style is filiform, and somewhat longer than the stamina; the stigma is obtuse; the fruit is a roundish, triquetrous

quetrous capsule, formed of three valves, and containing three cells: the seeds are numerous and globose; the receptacle is columnar. It is figured by Dillenius, Hort. Elth. 221.

AMARYLLIS.

THE calyx is an oblong, obtuse, compressed, emarginated spathe, opening in the plane side, and deciduous: the corolla consists of six lanceolated petals; the stamina are six subulated filaments: the antheræ are oblong, incumbent, and asurgent: the germen is roundish, sulcated, and placed below the cup: the style is filiform, of the length and situation of the stamina; the stigma is trifid and slender: the fruit is an oval, or nearly oval, capsule, formed of three valves, containing three cells: the seeds are numerous: the inflexion of the petals, stamina, and pistil, in this genus, is very different in the various species.

This genus comprehends the *Lilionarcissus* of Tournefort and Dillenius.

1. *Amaryllis spathe multiflora, corollis revolutis, genitalibus striatis.*

The many-flowered *Amaryllis*, with revolute flowers, and close stamina.

The Guernsey
Lily.

This is by far the most beautiful plant of it's genus, perhaps the most beautiful in the world. It's root is a large bulb; it's leaves are eight inches long, an inch broad, of a strong bluish-green, and smooth; eight or ten of them grow in a cluster, and they usually droop their extremities toward the ground; the stalk rises not in the midst of these, but long before them, when the plant is of an age to flower: they only appear, after the stalk is faded; this is tender, green, and succulent, and is beautifully spotted with purple at the bottom; at it's top stands a cluster of ten or twelve flowers; they are very large, and of a fine bright red, spangled, as it were, with gold-coloured spots, which, in the sun, shine like burnished gold.

It is a native of Japan, but it thrives excellently wild in our island of Guernsey, where the roots were long since scattered by some accident, and whence we have been plentifully supplied ever since. Cornutus and others call it, *Narcissus Japonicus rusticus flore*.

2. *Amaryllis spathe uniflora, corolla inequali, genitalibus declinatis.*

The single-flowered *Amaryllis*, with an unequal corolla, and declinated stamina.

The root is a bulb of the size and figure of a small onion, but blackish on the outside; the leaves are thick, oblong, and narrow; the stalk is a foot high, usually single; sometimes there are two from the same root; it grows to a foot high, and is roundish, succulent, and of a reddish colour: the spathe, while closed, is of a beautiful red; when it bursts, a single flower appears. It is large, pendent, and of a bright red colour; the petals are disposed three and three, and the middle one of the upper series stands more erect than the rest.

It is a native of Mexico. C. Bauhine calls it, *Narcissus Indicus totus ruber*; others, *Narcissus Jacobæus flore sanguineo*.

The other species of the *Amaryllis* are, 1. The small-flowered, red *Amaryllis*. 2. The great, round-headed *Amaryllis*, with numerous red flowers. 3. The dwarf, many-flowered, Indian *Amaryllis*. 4. The Jamaica *Amaryllis*, with red and yellow flowers. 5. The American, convallaria-leaved *Amaryllis*. 6. The little, single-flowered, white *Amaryllis*. 7. The yellow, vernal *Amaryllis*. 8. The little, yellow, autumnal *Amaryllis*. Culture makes many varieties of one or other of these species, which are themselves described as species by too many.

PONTEDERIA.

THE calyx is an oblong spatula, opening sideways: the corolla is formed of a single petal, divided into two parts, and ringent: the upper lip is straight, plane, and it's top divided into three equal segments: the lower lip is reflex, divided into three parts, and these also equal: the stamina are six filaments, inserted into the corolla; one of them is very short, and two are longer than the other: the antheræ are incumbent; the germen is oblong, and placed above the receptacle; the style is simple, very short, and declinate; the stigma is simple: the fruit is a fleshy capsule, of an oval figure, somewhat triangular, marked with three furrows, and containing three cells: the seeds are numerous, and of a roundish figure.

It is a native both of the East and West Indies, and is described by Houston under the name of Michelia.

Class the Sixth. Order the First.

Division the Third.

Hexandria Monogynia, with naked flowers, consisting of six petals.

CRINUM.

THE calyx is a spathiform, general involucre, composed of two oblong leaves, which bend downward, after it opens, and expose to sight a kind of little umbrella: the corolla is infundibuliform, and consists of a single petal; the tube is oblong, cylindric, and bent; the limb is divided into six lanceolato-linear, obtuse, concave, reflex segments, three of which alternately are distinguished by an uncinated appendage. The stamina are six subulated filaments, arising from the base of the limb; they are of the length of the limb, and connivent: the antheræ are oblong, linear, incumbent, and assurgent: the germen is placed in the bottom of the corolla; the style is subulated, and shorter than the stamina; the stigma is trifid, and very small; the fruit is a capsule of a suboval figure, with three cells; the seeds are numerous.

Of this genus there is only one known species, and this has been usually called a *Liliosphodelus* by authors.

CRINUM.

The root is a large tunicated bulb; the leaves are six or eight inches long, half an inch broad, and of a bluish-green, and remain green all the winter. The stalk is round, green, succulent, thick, naked, and near a foot high: the flowers are large and white, and stand ten or fifteen together in a cluster, at the top of the stalk.

It is a native of America. Commelin calls it, *Liliosphodelus Americanus semipervirens minor albus*. We have it in some of our gardens.

BULBOCODIUM.

THERE is no calyx; the corolla is of a funnel-like shape, and is formed of six petals. The ungues are very long and linear; the bractæ are connected at the mouth, and the limb is erect and formed of the bractæ, become of a lanceolated figure, and concave. The stamina are six subulated filaments, of but half the length of the limb; they are inserted into the neck of the corolla: the antheræ are incumbent: the germen is in figure ovato-subulated, and obtusely trigonal: the style is filiform, of the length of the stamina: the stigmata are three, oblong, erect, and furrowed: the fruit is a triangular, acuminate capsule, containing three cells: the seeds are numerous.

ALLIUM.

ALLIUM.

THE calyx is a common spatula, of a roundish figure, terminating in a long point, and deciduous: the corolla consists of six oblong, narrow, comato-erect petals: the stamina are six subulated filaments, of the length of the corolla: the anthers are oblong and erect; the germen is short and trigonal, with a line on every angle: the style is simple; the stigma is acute: the fruit is a very short, broad capsule, of a trilobated figure, consisting of three valves, and containing three cells: the seeds are numerous, and of a roundish figure.

This genus comprehends the *Allium* and the *Moly* of authors, and the *Cepa* and *Porrum* of Linnaeus, in his *Genera Plantarum*.

1. *Allium caule planifolio bulbifero, radice composita, flaminibus tricuspis.*

**Common
Garlick.**

The planifolious, bulbiferous-stalked Allium, with a compound root, and three-pointed stamina.

The root is a composite bulb, of the bigness of a hen's egg, formed of a number of smaller bulbs, surrounded by a common membrane, acrid to the taste, and of a very strong smell. The leaves are numerous, a foot and a half long, narrow and thin. The stalk is round, smooth, naked, hollow, and two or three feet high. The flowers are small and whitish, but they stand in a very large cluster, at the top of the stalk.

It is a native of Sicily; we have it in all our gardens. C. Bauhine and others call it, *Allium sativum*. It's root is used in the shops as an aperient and diuretic; a syrup of it is excellent in asthma's, and other disorders of the breast, arising from a tough, viscid phlegm.

2. *Allium scapo nudo, foliis lanceolato-fessilibus, umbella fastigiata.*

**Yellow
Moly.**

The naked-stalked, lanceolato-fessile-leaved Allium, with a fastigiated umbel.

The root is a bulb, sometimes single, sometimes double, and resembling that of an orchis. The leaves stand two together, surrounding one another at the base; they are ten inches long, an inch and a half broad, erect, firm, somewhat hollowed toward the base, of a bluish-green colour, and of the smell of garlick. The stalk is round, smooth, slender, but firm, and a foot, or more, in height. The flowers are small, of a pale whitish-yellow on the outside, and of a deep yellow within: each has it's separate pedicle, an inch long, or more; and a cluster of thirty, or more, of them, stand together, at the summit of the stalk, in a kind of globular form.

It is a native of Hungary, and of some parts of France. C. Bauhine calls it, *Moly latifolium luteum odore allii*.

3. *Allium scapo nudo, inferne ventricoso, longiore, foliis teretibus.*

**The
Onion.**

The naked and ventricose-stalked Allium, with cylindric leaves.

The root is a large, tunicated bulb, acrid, and irregular in shape, sometimes perfectly round, sometimes oblong, sometimes depressed. The leaves are a foot long, hollow, rounded, and of a strong green colour. The stalk is naked, thick, straight, and hollow; toward the middle it swells into a kind of belly, and is four or five feet high: at the top stands a large, round cluster, of little, greenish, white flowers. Culture makes a vast number of varieties in this species, in the colour, shape, and taste of the roots, &c. and these varieties have been described under the names of different species, but the plant is the same in all.

4. *Allium caule planifolio, umbellifero, radice tunicata, flaminibus tricuspidatis.*

The planifolious-stalked Allium, with a tunicated root, and The Leek.
tricuspidate stamina.

The root is a large bulb, compact, but tunicated, and fibrated at the bottom. The leaves are large, half an inch broad, and a foot long; they stand alternately on the young stalks, and surround them at the base; when the stalk grows higher, the leaves are narrower, and carinated. The stalk is thick, succulent, and three or four feet high; at the top stands a cluster of flowers, of the bigness of a man's fist; they are small, and of a purplish colour.

The Leek and Onion are both natives of Italy; we have them in all our kitchen gardens.

5. *Allium scape nudo folia adequante, foliis teretibus ventricosis.*

The lew, ventricose-leaved, naked-stalked Allium.

The Long
Onion.

The length or roundness of the root we have already observed makes no specific distinction in the Onion; the root of this is, indeed, always oblong, but it has other more essential differences from the common kind. Its stalk is not above a foot and a half high, and the stamina, in its flowers, are simple, not tricuspidate, as in the common Onion; its leaves are hollow, and rounded; its flowers whitish, with a tinge of purple; the root is sometimes white, sometimes reddish.

It is a native of Spain. C. Bauhine calls it, *Cepa radice longa*.

The other more singular species of this genus are, 1. The convoluted-stalked Allium, or Ophioscordon. 2. The smaller, rounded-headed Allium. 3. The leek-leaved Allium, with purple flowers. 4. The broad-leaved, wild Allium, called Ramsons. 5. The narrower, thin-leaved Allium. 6. The bicornate, wild Allium. 7. The striated-flowered Allium. 8. The rusty-leaved, yellow Allium. 9. The purple, Pyrenean Allium. 10. The narcissus-leaved Allium. 11. The long-rooted, mountain Allium. 12. The lilaceous Allium. 13. The purple, African Allium. 14. The narrow-leaved Allium, with yellow flowers. 15. The grassy Allium. 16. The crenated-leaved Allium. 17. The rusty-leaved Allium, with a sweet smell. Of those called Onions and Leeks are, 1. The Aetnaic Allium, or Scallions. 2. The fusile Allium, or Chiboule. 3. The perennial scissile Allium, with rusty leaves. 4. The five-leaved, purple Allium. 5. The double-headed Allium. 6. The narrow-leaved, foliaceous-stalked Allium, called narrow Leek. 7. The purple, sweet-scented, oriental Allium.

L I L I U M.

THERE is no calyx: the corolla has a narrow, campanulated base; from this proceed six erecto-incumbent petals, obtusely carinated at the base, growing gradually wider, and more patent, and with their extremities thick, obtuse, and reclinate: the nectarium is a longitudinal line in each petal, near the base: the stamina are six subulated, erect filaments, shorter than the corolla: the anthers are oblong and incumbent; the germen is oblong, cylindric, and marked with six striae: the style is cylindric, and of the length of the corolla: the stigma is thick and triangular: the fruit is an oblong capsule, furrowed with six deep lines; its top is hollow, trigonal, and obtuse; it is composed of three valves; it contains three cells, and the seeds are very numerous, and stand in double rows; they are flat, and semiorbiculated externally: the nectarium in some species is plain, in others barbed; and the petals in some are intricately revolute, in others not.

1. *Lilium floribus sparsis oblongis, corollis campanulatis, intus glabris.*

The sparsed-flowered Lilium, with oblong, campanulated corollæ, smooth within.

The White Lily.

The root is bulbous, composite, and white. The stalk is very thick, four feet high, and full of leaves; these are oblong, moderately broad, smooth, and of a pale green colour: the flowers stand singly, on short pedicles, forming a large cluster at the top of the stalk; they are very large, of a snow-white colour, and very fragrant.

It is a native of Syria, where it is found plentifully wild in damp places; we have it in our gardens. C. Bauhine calls it, *Lilium album flore erecto vulgare*; others, only *Lilium album*. Its root and its flowers have been esteemed emollients externally used, but they are at present much neglected.

2. *Lilium foliis sparsis, corollis campanulatis erectis, intus scabris.*

The sparsed-leaved Lily, with erect, campanulated flowers, rough within.

Red Lily.

The root is a squamose bulb; the stalk is thick and round; it rises to four or five feet high; the leaves stand less frequent on it than in the white Lily, and are narrower, oblong, rigid, and of a shining blackish-green colour. The flowers resemble those of the common white Lily, but are of a fine reddish-yellow colour, and scabrous within.

It is a native of Italy and Spain, and of Russia; it is common in our gardens. C. Bauhine calls it, *Lilium purpureo-croceum majus*, and *Lilium bulbiferum* afterwards, as if of another species.

3. *Lilium foliis sparsis, floribus reflexis, corollis revolutis.*

The sparsed-leaved Lilium, with reflex flowers and revolute corollæ.

The root is a squamose bulb: the stalk rises to two feet high. The leaves are oblong, and very narrow, of a pale green colour, rigid and nervous. The flowers are large; they stand in considerable clusters, and are of a deep bloody purple; they hang downwards, and the petals turn back.

It is a native of Asia; we have it in gardens. C. Bauhine calls it, *Lilium floribus reflexis angustifolium*; Clusius, *Lilium rubrum præcox*.

The other species of the Lily are very numerous, and culture has made so many varieties from each, that the apparent number is much greater. The principal and more certainly distinct are, 1. The great, pendent-flowered, broad-leaved Lilium. 2. The plantain-leaved, bloody Lilium. 3. The hoary-leaved, bloody Lilium. 4. The great, nutant-flowered Lilium, called the great Martagon. 5. The hoary Martagon. 6. The bright, red, many-flowered Lilium. 7. The early, narrow-leaved Lilium. 8. The grassy-leaved Lilium. 9. The yellow, nutant Lilium. 10. The broad-stalked, Syrian Lilium. 11. The long-spiked and reflex flowered Lilium. 12. The bright red, Byzantine Lilium. 13. The pyramidal, musk Lilium. 14. The short and very narrow-leaved Lilium.

FRITILLARIA.

THERE is no cup: the corolla is composed of six petals, and is of a campanulated form, with a broad base: the petals are oblong, and parallel: the nectarium is a cavity, hollowed near the base of every petal: the stamina are six subulated filaments, pressing upon the style: the anthers are quadrangular, oblong, and erect: the germen is oblong, trigonal, and obtuse: the style is simple, and longer than the stamina: the stigma is triple, patens, and obtuse: the fruit is an oblong, obtuse, trilobate capsule, formed of three valves, and containing three cells: the seeds are numerous, plane, sinuoribiculated externally, and placed in a double row.

This genus comprehends the Fritillary, Peilium, and Corona Imperialis of Tournefort, and the *Lilifritillaria* of Boissave. In the *Fritillaria* of authors the nectarium

is

is oblong, and the fruit smooth; in the *Corona Imperialis* the nectarium is hemispheric, and the fruit acutely emarginated.

1. *Fritillaria foliis omnibus alternis.* Common
The Fritillary, with all the leaves alternate. Fritillary.

The root is a solid bulb, white and succulent. The stalk is slender, round, purplish, and not very robust; the height about eight inches. The leaves are very narrow, long, carinated, and of a dusky green colour; they all stand alternately on the stalk, and there are usually about six or seven of them on it. The flower is large, often single, sometimes two or three grow together: the pedicle is an inch long, slender and nutant: the flower is usually beautifully chequered with squares of a dark purple, and of a pale red colour, but sometimes it is white, or has a great deal of white in it.

It is a native of Germany and Sweden, and is frequent in our gardens. C. Bauhine calls it, *Fritillaria præcox purpurea variegata*; Dodonæus and Renealm, *Meleagris*.

2. *Fritillaria foliis imis oppositis.* The little=
The Fritillaria, with the lower leaves in pairs. flowered Fritillary.

The root is a large, solid bulb; the stalk is round, slender, erect, and a foot, or more, high: the leaves are narrow, long, and of a dusky green colour; there are fifteen or twenty of them on the stalk, and the lower ones stand in pairs, opposite to one another; the others alternate. The flowers are small, and of a blackish purple colour, and the ends of them turn up: the three interior petals are narrower than the others, and the whole flower resembles a bell.

It is a native of the Apennines. C. Bauhine and others call it, *Fritillaria flore minore*.

3. *Fritillaria racemo nudiusculo, foliis obliquis.* The Per=
The naked-clustered Fritillary, with oblique leaves. sian Lily.

The root is a large, round squamose bulb; the stalk rises to three feet high, and is round, slender, and set full of leaves; these are oblong, very narrow, and of a dusky greyish-green; at the top of the stalk stands a long spike of flowers, each on it's separate pedicle, an inch and a half, or more, in length; they are large, of a deep purple colour, and hang downward.

It is a native of the East, but is frequent in our gardens. C. Bauhine and others call it, *Lilium Persicum*.

4. *Fritillaria racemo comoso, inferne nudo.* The Crown=
The Fritillary, with a comose cluster, naked at the bottom. Imperial.

The root is a large, compressed, squamated bulb, of a whitish or reddish colour, and poisonous smell. The stalk is round, striated, thick, and three feet high. The leaves stand in clusters on the lower part of the stalk; they are long, narrow, and sessile; adhering by a broad base, and rendering the stalk angular; by running down it: from the top of this leafy part the stalk runs up naked, a foot, or more, high; it is slenderer, and not striated, but spotted with purple. The flowers stand in a cluster at the top, three, four, or more, together, on separate pedicels, each with two narrow, little leaves at it's base; they are large, of a reddish yellow colour, and dependent.

It is a native of Persia, but is frequent in our gardens. C. Bauhine and others call it, *Corona imperialis*; Linnaeus, in his Hort. Cliffort. *Petilium foliis lanceolatis*; he then supposed it of a distinct genus from the Fritillary, but afterwards found it of the same.

The other species of Fritillary are numerous; their varieties owing to culture much more so. The more singular and certainly distinct are, 1. The large-flowered, autumnal Fritillary. 2. The little, yellow Fritillary. 3. The large, yellow Fritillary. 4. The greenish-yellow Fritillary. 5. The Fritillary, with umbellated flowers. 6. The branched, purple Fritillaries. These are all called Fritillaries by authors. The *Corona Imperialis* is a single species, though it's varieties described by authors under the name of

of species, amount to more than twenty. Tournefort enumerates them; they consist in the size and colour of the flower, and in the variegations of the leaves.

TULIPA.

THERE is no calyx: the corolla is of a campannated form; it consists of six petals, of an ovato-oblong form, concave and erect: the stamina are six short, subulated filaments: the antheræ are quadrangular, oblong, erect, and distant: the germen is large, oblong, and trigonal, but approaching to a cylindric form: there is no style: the stigma is trilobate and triangular: the angles are protuberant, bifid, and permanent: the fruit is a triquetrous capsule, formed of three valves, and contains three cells; the valves are oval, and have a ciliated edge: the seeds are numerous, plane, and placed in a double series; they are semicircular, and separated by conform flocci.

Of this genus there is but one known species, though infinitely varied by culture.

TULIPA.

The Tulp.

The root is a moderately large bulb: the radical leaves are oblong, broad, thick, even at the edges, and of a greyish-green colour. The stalk rises to a foot and a half high, and has usually three leaves on it, like the radical ones, but smaller. The flower is single, and stands erect on the summit of the stalk; it is large, and of a pale red colour.

This is the natural, original Tulip. It is a native of Greece, and has been introduced into our gardens about a hundred and ninety years, in which time five times as many varieties of it have been raised by culture, and a very considerable part of these described as distinct species by authors: Tournefort alone enumerates considerably more than a hundred of them as distinct plants. The judicious reader will not wonder that we have greatly reduced the supposed number of species in general in this work, when he sees that more than a hundred are here necessarily struck off at once: the varieties are very beautiful, but they should be the delight of gardeners, not of botanists.

ERYTHRONIUM.

THERE is no calyx: the corolla consists of six oblong, lanceolated, acuminate petals, alternately incumbent on one another at the base, and, after gradually becoming wider, turning back from about the middle: the nectaris are two obtuse, callous tubercles, adhering to the alternate, interior petals, at the base: the stamina are six subulated, very short filaments: the antheræ are oblong: the germen is turbinate: the style is simple and strait, shorter than the corolla, but longer than the stamina: the stigma is triple, patent, and obtuse: the fruit is a capsule of a subglobose figure, narrowest at the base, formed of three valves, and containing three cells: the seeds are numerous, and of an ovato-acuminate figure.

Of this genus there is only one known species.

ERYTHRONIUM.

Dog's Tooth.

The root is two inches long, thickest at the bottom part, and smaller toward the top: the radical leaves are usually only two, sometimes three; they are oblong, broad, narrow at the base, and terminate in a point, sometimes narrower, sometimes, especially when there is only a single leaf, broader, and roundish; they are often four inches long, and an inch broad, of a deep green colour, and usually spotted with purple. The stalk is single, round, tender, reddish, naked, and three or four inches high. The flower is single; it stands on the top of the stalk, and is moderately large, and either white or purplish.

It is a native of Spain, Italy, and Germany, and is frequent in our gardens. C. Bauhine calls it, *Dens canis latiore folio*, and describes, as indeed most other authors have also done, a variety of it as a distinct species, under the name of *Dens canis angustiore folio*.

UVULARIA.

THERE is no calyx: the corolla consists of six oblongo-lanceolate, acute, erect, and very long petals: the nectarium is an oblong cavity, formed toward the base of every petal: the stamens are six very short, and broad, filaments: the anthers are long, erect, and of half the length of the corolla: the germen is roundish: the style is single, but semitrifid, filiform, and shorter than the stamens: the stigmata are simple and reflex: the fruit is an ovate-oblong, and somewhat triangular, capsule, containing three cells: the seeds are numerous, roundish, and compressed.

GLORIOSA.

THERE is no calyx: the corolla consists of six oblongo-lanceolated, undulated, and very long petals, reflex to near the base: the stamens are six subulated filaments, patulous, and shorter than the corolla: the anthers are incumbent; the germen is globose: the style is filiform, and longer than the stamens, and inclined: the stigma is triple and obtuse: the fruit is an oval, pellucid capsule, formed of three valves, and containing three cells: the seeds are numerous, globose, and disposed in a double series.

Tournefort has given this genus the name of *Methonica*, in the *Memoirs* of the Paris Academy, 1706.

ASPHODELUS.

THERE is no calyx; the corolla consists of a single petal, divided into six parts: the segments are lanceolated, plane, and patent: the nectarium consists of six valvulae very small, inserted into the base of the petal, and connivent, so as to form a globe: the stamens are six subulated, arcuated filaments; the three alternate ones shorter, and all inserted into the valves of the nectarium: the anthers are oblong, incumbent, and affurgent; the germen is roundish, and stands within the nectarium: the style is subulated, and stands on the stamens; the stigma is truncated: the fruit is a fleshy capsule, of a globose figure, divided into three lobes, and containing three cells: the seeds are numerous, triangular, and gibbous on one side: the stamens are in some species declinated, in others bent outwards.

1. *Asphodelus caule simplici foliis, foliis trigonis fistulosis.*

The single, leafy-stalked *Asphodelus*, with trigonal, fistulous leaves.

Yellow Asphodel.

The root consists of a number of tuberosities, oblong, thick, and yellow, furnished with many thick and strong fibres. The radical leaves are long and narrow; the stalk grows to three feet high; the leaves stand very thick upon it, and are of a trigonal shape, and hollow; the flowers are moderately large and yellow, they stand in a long spike, reaching from the top almost to the bottom of the plant.

It is a native of Sicily; we have it in our gardens. C. Bauhine calls it, *Asphodelus luteus flore et radice*.

2. *Asphodelus caule nudo ramoso, foliis striatis, subulatis fistulosis.*

The naked, ramose-stalked *Asphodelus*, with striated, subulated, fistulous leaves.

Hollow-leaved Asphodel.

The root is composed of a number of oblong tuberosities; the radical leaves are very narrow, sometimes round, sometimes flattened on one side; they are pointed at the end, narrow, and somewhat rough to the touch: the stalk is smooth, branched, and has no leaves on it: the flowers are large, and the nectarium very obvious.

It is a native of Spain, France, and Italy. C. Bauhine calls it, *Asphodelus foliis fistulosis*.

The

The other more singular species are, 1. The great, white, ramose Asphodel. 2. The little grassy-leaved Asphodel. 3. The patulous-stalked, compressed-leaved Asphodelus. 4. The great-flowered, spiral, yellow Asphodel. 5. The rough-leaved, patulous, yellow Asphodel.

ANTHERICUM.

THERE is no calyx; the corolla consists of six petals of an oblong, obtuse figure, and very patent: the stamina are six subulated, erect, and very hairy filaments: the antheræ are small, incumbent, and quadrifid; the germen is obscurely trigonal; the style is simple, of the length of the stamina; the stigma is obtuse and trigonal: the fruit is a smooth, oval, trigonal capsule, marked with three furrows, composed of three valves, and holding three cells; the seeds are numerous and angular. The hairiness of the stamina is the great character.

1. *Anthericum foliis planis, caule simplicissimo.*
The plane-leaved and simple-stalked *Anthericum*.

Single-stalked
Spider-wort.

The root consists of a multitude of long, thick, white fibres; the radical leaves stand in clusters, surrounding one another at the base; they are narrow, long, pointed at the end, of a bright green, and stand erect. The stalk is round, smooth, succulent, and grows to a foot high, single and straight; at it's top stands a kind of spike of flowers, which are large and snow-white.

It is a native of the Pyreneans; we have it in our gardens, where it grows larger, and varies so much, that it has been made into two or three other species. C. Bauhine calls it, *Phalangium parvo flore, non ramosum*; Ray, *Phalangium pulchrius, non ramosum*.

2. *Anthericum foliis planis, corollis planis deciduis.*
The plane-leaved *Anthericum*, with plane, deciduous flowers.

Branched
Spider-wort.

The root is composed of a multitude of thick fibres, white, and sweetish to the taste: the radical leaves are narrow, and a foot, or more, in length; they lie flat on the ground: the stalk is two feet, or more, in height, very slender, round, smooth, and succulent; the flowers stand on the several branches it divides itself into; at the top, they are large, and of a fine snow-white.

It is a native of Germany. C. Bauhine calls it, *Phalangium parvo flore ramosum*.

The other more singular species are, 1. The great, lily-flowered *Anthericum*, called great Spider-wort. 2. The fistulous-leaved *Anthericum*. 3. The sessile, pulpy-leaved *Anthericum*. 4. The striated, fleshy, subulated-leaved *Anthericum*. 5. The fleshy, cylindric-leaved, striated *Anthericum*. 6. The marsh, iris-leaved *Anthericum*. 7. The little Scottish, iris-leaved *Anthericum*. 8. The larger, acute-leaved *Anthericum*.

SCILLA.

THERE is no calyx; the corolla consists of six oval, deciduous, and very patent petals: the stamina are six subulated filaments, of half the length of the corolla: the antheræ are oblong and incumbent: the germen is roundish; the style is simple, of the length of the stamina, and deciduous; the stigma is simple: the fruit is a smooth capsule, of a suboval figure, marked with three furrows, formed of three valves, and containing three cells: the seeds are numerous and roundish.

This genus comprehends the *Liliohyacinthus* of Tournefort, and the *Hyacinthus Stellaris* of Ray and others.

1. *Scilla radice tunicata.*
The tunicated-rooted *Scilla*.

The Squill.

The root is a roundish, very large, tunicated bulb; the coats are very thick, and full of a slimy, acrid juice: the leaves are a foot and half long, and three or four inches broad,

broad, thick, juicy, and of a fine bright green. The stalk rises to three feet high; it is green, succulent, slender, and round; the flowers stand in a long series toward the top; they are small and white.

It is a native of the sea-coasts of Spain and Italy. C. Bauhine calls it, *Scilla vulgaris radice rubra*; Clusius, *Scilla Hispanica*. It's root is sometimes reddish, sometimes white, and hence some have made two species of it, a red and a white rooted squill. The root is used in medicine as an emetic and detergent; an oxymel is made of it in the shops.

2. *Scilla radice squammata corollis majoribus.*
The squammated-rooted Scilla, with large corollæ.

**The blue, starry
Hyacinth.**

The root is a large, roundish bulb, formed of a number of thick squammæ, and resembling that of the lily; the leaves are ten inches long, narrow, and of a bright green: the stalk is round, succulent, and green; the flowers large, and of a beautiful blue, sometimes of a pale red, sometime white, whence Tournefort has divided it into as many species.

It is a native of the East; we have it frequently in gardens. C. Bauhine calls it, *Hyacinthus stellaris foliis et radice lili*; Tournefort, *Lilohyacinthus flore 1. Cæruleo. 2. Albo. 3. Rubello.*

ORNITHOGALUM.

THERE is no calyx, except a few vague fulcra are understood to be such. The corolla consists of six petals, of a lanceolated figure, from the base to the middle erect, from thence to the points plano-patent; they are permanent, but they lose their colour: the stamina are six erect filaments, of an uncertain figure, of about half the length of the corolla; the antheræ are simple: the germen is angular; the style is subulated and permanent: the stigma is obtuse: the fruit is a roundish, angulated capsule, formed of three valves, and containing three cells: the seeds are numerous and roundish; the receptacle columnar: the stamina are in some species plane, erect, trisid at the top, with the anthera on the middle segment.

1. *Ornithogalum scapo anguloso diphylo, pedunculis
umbellatis simplicibus.*

*The angular stalked, two-leaved Ornithogalum, with
simple, umbellated peduncles.*

**Yellow Star of
Bethlehem.**

The root is a small fleshy bulb, full of a viscous juice. The radical leaves are usually two; they are six inches long, half an inch broad, of a deep green, and ribbed longitudinally: the stalk rises single, angular, greenish, or reddish, and about four or five inches high, and toward it's top has usually two leaves, small and narrow near the top. The flowers stand on long pedicles, and form a kind of umbel; they are green on the outside, with a rim of yellow, and are perfectly yellow within.

It is a native of Germany and Sweden. C. Bauhine calls it, *Ornithogalum luteum*; Dodonæus, *Bulbus sylvestris*.

2. *Ornithogalum scapo angulato diphylo, pedunculis umbellatis ramosis.*

*The angular-stalked Ornithogalum, with two leaves, and ramose, um-
bellated peduncles.*

The root is a round, solid bulb, not much larger than a pea; there usually rises from this a single leaf, three or four inches in length, very narrow, and of a whitish green: the stalk is angular, very slender, about three inches high, and has usually two leaves on it; at it's top it sends off a number of peduncles, which subdivide into others, and these support the flowers; they are small, and of a purplish yellow without, of a pure yellow within.

It is a native of Spain and Italy. C. Bauhine calls it, *Ornithogalum luteum minus*.

The

The other species are, 1. The common, greenish, white Ornithogalum. 2. The great, white-spiked Ornithogalum. 3. The smaller-flowered, spiked Ornithogalum. 4. The great, broad-leaved Ornithogalum, with snow-white flowers. 5. The great, umbellated, Arabian Ornithogalum. 6. The common, umbellated Ornithogalum. 7. The bluish-white, umbellated-flowered Ornithogalum. 8. The very narrow-leaved, yellow Ornithogalum. 9. The single, rusty-leaved Ornithogalum. 10. The comose Ornithogalum, with snow-white flowers. 11. The bifoliate, large, blue-flowered Ornithogalum. 12. The purple, starry, autumnal Ornithogalum. 13. The blue, vernal, starry Ornithogalum. 14. The great-spiked, bluish, starry Ornithogalum. 15. The flower upon flower, Indian, purple, starry Ornithogalum. 16. The Eriopherous, starry, Indian Ornithogalum. Many of these species are called, by the generality of writers, starry Hyacinths; they are most of them received into our gardens, and have afforded a multitude of varieties by culture, which Tournefort and two many others have given as so many distinct species, as the red-flowered, the white-flowered, the double-flowered, &c.

ASPARAGUS.

THERE is no calyx; the corolla is of an oblong, campanulated figure; it is composed of six petals, cohering at their tips; they are oblong, formed into a tube, and though three inner ones are alternately placed, and reflex at the extremities, they are all permanent: the stamina are six filiform capillaments, inserted into the petals; they are erect, and of about half the length of the corolla; the antheræ are roundish: the germen is trigonal, of a turbinated form: the style is very short; the stigma is a prominent point: the fruit is a globose berry, with an umbilicus, and contains three cells: the seeds are two in each, smooth, roundish, but internally angular: the figure of the corolla varies; it is sometimes erect, sometimes plane, sometimes revolute. It may not improperly be called a monopetalous flower.

Asparagus foliis setaceis, caule herbaceo.

The setaceous-leaved Asparagus, with an herbaceous stalk.

**Aspara-
gus.**

The root is composed of a multitude of long and thick fibres, arising from a small tuberous head, and dispersing themselves every way: the stalk is at first thick, succulent, and tender; it afterwards grows slender and robust, hard, green, smooth, round, and very ramose: the leaves are very numerous, an inch in length, of a fine green, and scarce thicker than a thread: the flowers are small and greenish; the berries large, and of a bright red. The plant grows to two feet and a half high, when wild; in gardens to much more.

It is a native of most parts of Europe in damp places, but it is greatly improved in the thickness and tenderness of its esculent shoots in gardens. C. Bauhine calls it, *Asparagus hortensis et pratensis*. Its roots are an excellent diuretic, as indeed are also the shoots eaten at our tables.

The other species are, 1. The thick-leaved, herbaceous Asparagus. 2. The herbaceous, prickly Asparagus. 3. The prickly, woody Asparagus. 4. The acute-leaved, spinose Asparagus. 5. The great, prickly, Indian Asparagus.

LEONTICE.

THE calyx is very small and deciduous; it is composed of six little leaves: the corolla consists of six petals, of an oval figure, narrowest at the base; the three interior ones are alternately smaller: the stamina are six very short filaments; the antheræ are erect, formed of two valves, divided into two cells, and open lengthwise from the base to the apex, where the two valves are united firmly: the germen is of an oblong, oval figure; there is no style: the stigma is obtuse, and of the height of the stamina: the fruit is a large, globose, acuminate capsule, inflated, somewhat succulent, and containing only one cell: the seeds are numerous and globose.

1. *Leontice foliis tripartitis.*
The tripartite-leaved Leontice.

The root is tuberous, of the bigness of an orange, greyish on the outside, green within, and covered with a multitude of protuberances. The radical leaves rise to a foot, or more, in height: the pedicels are long, and are divided into three parts, on each of which there stand two or three leaves, of a roundish figure, some more, some less, indented and jagged round the edges; they are full of ribs, and of a bluish-green colour. The stalk is round, slender, green, and striated with purple streaks; it is divided into several branches toward the top: the leaves stand singly at their joints, and are smaller and less indented than the radical ones: the flowers stand in a kind of spikes at the tops of the branches; they are large and yellow, and each has it's separate pedicle an inch long, usually with a little leaf at it's base: the seeds are black.

It is a native of Italy. C. Bauhine and others call it, *Leontopetalon*.

There is only one species beside of this genus, which will easily be distinguished by it's name; it is the simple-leaved *Leontice*.

Class the Sixth. Order the First.

Division the Fourth.

Hexandria Monogynia, with flowers consisting of a single petal, without any cup.

CONVALLARIA.

THERE is no calyx; the corolla is smooth, of a campanulated form, and composed of a single petal, divided at the extremity into six short, obtuse, patent-reflex segments. The stamina are six subulated filaments, inserted into the petal, and shorter than it: the anthers are oblong and erect; the germen is globose; the style is filiform, and longer than the stamina: the stigma is obtuse and trigonal: the fruit is a globose berry, containing three cells, and is spotted, before it is ripe: the seeds are single and roundish.

This genus comprehends the *Lilium Convallium*, the *Polygonatum*, and the *Unifolium* of authors. In all these the berry, before it is ripe, is spotted. In the *Lilium Convallium*, the corolla is globose, campanulated, and patent; in the *Polygonatum*, the corolla is tubulato-campanulated; in the *Unifolium*, a third part of all the fructifications is wanting: and, finally, some of the species of *Smilax* of Tournefort are included in this genus, in which the corolla is divided into six very acute and patent segments.

1. *Convallaria scapo nudo.*
The naked-stalked Convallaria.

Lily of the Valley.

The root is oblong, slender, and white, and creeps under the surface; from this rise usually two, sometimes three, leaves; they are six inches long, two broad, and of a deep green; they are small at the base, largest in the middle, and pointed at the end. The stalk is naked, slender, angulated, and six inches high; from it's middle to the top stand the flowers in a single series, placed one way, and dependent; they are small, white, and of an extremely fragrant smell.

It is a native of our woods, and is frequent also in gardens. C. Bauhine. &c. call it, *Lilium Convallium*.

2. *Convallaria foliis alternis floribus, ex alis.*
The alternate-leaved Convallaria, with flowers from the ale. *Solomon's Seal.*

The root is oblong, white, creeping, jointed and fibrated. The stalk is round, green, slender, but firm, and two feet high; it is naked toward the bottom, but toward the top it bends downward, and is all along that part thick-set with alternate leaves,

leaves, two inches long, an inch broad, and nervous. The flowers are numerous, small, oblong, tubular, and white; they have short pedicles, sometimes simple, sometimes ramose.

It is a native of our woods. C. Bauhine calls it, *Polygonatum latifolium vulgare*. It varies extremely in the size of the leaves and flowers, and these varieties have been described as distinct species, by authors, under the names of *Polygonatum latifolium maximum*, and *Polygonatum latifolium flore majore odore*.

The root is a famous vulnerary, and is applied in form of a cataplasm to contusions.

3. *Convallaria foliis verticillatis*.

The verticillate-leaved *Convallaria*.

Narrow-leaved
Solomon's Seal.

The root is oblong, slender, white, and jointed; the stalk is angulated, slender, and a foot and half high; the leaves are small and narrow; they stand four or five at a joint, surrounding the stalk in a verticillate manner, and are of a bluish-green, and smooth; the flowers stand round the stalks in the same manner, and are small, and of a greenish-white.

It is a native of Sweden and Germany. C. Bauhine calls it, *Polygonatum angustifolium*; Dodonæus, *Polygonatum alterum*.

4. *Convallaria foliis cordatis*

The cordated-leaved *Convallaria*.

One Blade.

The root is slender and creeping; the radical leaf is usually single, of a cordated form, three quarters of an inch long, half an inch broad, and placed on a slender pedicle of three or four inches in length; the stalk is slender, green, and four inches high, and has sometimes only one, but more usually two, sometimes three leaves on it, like the radical one in figure, and hairy underneath; at the top stands a cluster of little, white, sweet-scented flowers.

It is a native of Germany, and many other parts of Europe: Gerard and Parkinson pretend to have found it in England, but falsely. C. Bauhine calls it, *Monophyllum* five *Lilium Convallium minus*; others, *Unifolium*.

The other species are, 1. The single-flowered, sessile *Convallaria*. 2. The multi-florous *Convallaria*. 3. The hellebore-leaved *Convallaria*. 4. The dwarf, English *Convallaria*. 5. The bryony-leaved, American *Convallaria*. 6. The racemous *Convallaria*.

HYACINTHUS.

THERE is no calyx; the corolla is of a campanulated shape, and is formed of a single petal: the limb is divided into six reflex segments; the nectarium consists of three pores or cavities, filled with a honey juice, and situated at the top of the germen: the stamina are six short, subulated filaments; the anthers are connivent: the germen is roundish, but trigonal, and marked with three furrows: the style is simple, and shorter than the corolla; the stigma is obtuse: the fruit is a roundish capsule, triquetrous, formed of three valves, and containing three cells: the seeds are roundish, usually two in each cell; the receptacle is columnar.

This genus comprehends the *Hyacinthus* and *Muscari* of authors: in the *Hyacinthus* of authors, the corolla is oblong and tubulated; in the *Muscari*, it is inflated and globose.

1. *Hyacinthus corollis infundibuliformibus semisexifidis
basi ventricosis.*

The funnel-flowered *Hyacinth*, with the corolla ventricose, and divided into six segments.

Oriental
Hyacinth.

The root is a large bulb, full of a viscid juice: the radical leaves are six or eight in number; they are long, narrow, hollowed, and of a pale green at the base, and deeper toward the point. The stalk is round, thick, green, succulent, and eight inches, or more;

more, high. From the middle of this to the top stand the flowers in a kind of spike; they are large, and of a beautiful blue, and have each it's separate pedicle, about half an inch long, and dependent.

It is a native of the East, but is common in our gardens, where culture has produced a multitude of varieties of it, all which Tournefort has named as species; too many of them, almost all the other writers.

2. *Hyacinthus corollis campanulatis sexifidis.*
The campanulated-flowered Hyacinth.

Grassy Hyacinth.

The root is a large bulb; the radical leaves are seven inches long, grassy, and of a deep green: the stalk is green, round, succulent, and naked; at it's top stands a spike of large blue flowers, not ventricose at the base, divided into six segments to the middle, and these not curled back.

It is a native of the East, we have it in gardens. C. Bauhine calls it, *Hyacinthus caruleo oblongo flore minor*.

3. *Hyacinthus corollis globosis.*
The globose-flowered Hyacinth.

Racemose Grape-flower.

The root is a moderately large bulb, of an oblong figure; the radical leaves are six or eight in number, very narrow, eight inches long, striated, rusty, carinated, and purplish toward the base, green in other parts: the stalk is six or eight inches high, round, thick, naked, and succulent: the bottom is usually purplish; the middle green, and the top, where the flowers are, bluish: the flowers stand in a long close spike, two inches, or more, in length; they are small, globose, of a fine blue colour, and usually whitish at the edges; the top of the spike has a kind of racemose figure, and every flower has it's own short pedicle, and hangs pendent.

It is a native of Italy, but is frequent in our gardens. C. Bauhine calls it, *Hyacinthus racemosus caruleus*; Tournefort, *Muscari caruleum majus*.

4. *Hyacinthus corollis ovatis.*
The oval-flowered Hyacinth.

Dusk Hyacinth.

The root is a large, white, tunicated bulb; the radical leaves are six or eight in number, long, very narrow, furrowed, thick, and succulent: the stalk is thick, round, tender, and succulent, eight or ten inches high, and loaded with flowers from the middle to the top; these are oblong, or oval, of a fine blue colour, and a perfumed smell.

It is a native of Austria, but is common in our gardens. C. Bauhine calls it, *Hyacinthus racemosus Moschatas*.

These are the only four absolutely distinct species of Hyacinth; but the varieties of them from culture are almost innumerable. Tournefort, taking these for species, has extended them to near a hundred. Linnaeus, in his *Fundamenta Botanica*, allows but two distinct species of this genus; but since the publishing that work, he allows these four to be so.

POLYANTHES.

THERE is no calyx. The corolla is formed of one leaf, and is of an infundibuliform shape: the tube is oblong and crooked; the limb is patulous, and divided into six oval segments: the stamina are six thick, obtuse filaments, situate in the opening of the corolla; the anthers are linear, and longer than the filaments: the germen is roundish, and stands in the bottom of the corolla; the style is filiform, and shorter than the corolla; the stigma is trifid, thick, and covered with a honey-like juice: the fruit is a capsule of a roundish, but obtusely trigonal, form, composed of three valves, containing three cells, and wrapped up in the base of the corolla: the seeds are numerous, semiorbicular, plane, and laid in a double series. Heister has given this genus the name of *Tuberosa*.

A LOE.

A L O E.

THERE is no calyx; the corolla is oblong, and formed of a single petal, divided into six segments at the extremities: the tube is gibbous; the limb strait; the stamina are six subulated filaments, fully of the length of the corolla, and inserted in the receptacle: the antheræ are oblong and incumbent; the germen is irregular in it's figure; the style is simple, and of the length of the stamina; the stigma is obtuse and trifid: the fruit is an oblong, trifolucous capsule, formed of three valves, and containing three cells: the seeds are numerous and angular. The figure of the corolla in this genus is somewhat uncertain, but there are characters enough, beside those of that part, to distinguish it by.

1. *Aloe foliis angustis integris inermi-spinosis.* **The Succotrine**
The Aloe, with narrow, entire, weakly spinose leaves. **Aloe Plant.**

The root is tuberous, and large, covered with a greyish bark, and full of a bitter juice: the leaves are numerous, and stand wide; they are a foot and half long, not more than two inches broad, and are thick, succulent, and of a deep green; they terminate in a long spine at the end, and are beset round the edges with a multitude of weak, white spines. The stalk grows to near two feet high; it is round, smooth, succulent, and brownish; there are some little leaves on it toward the top: the flowers are large, bending, and of a beautiful purple; they stand in a kind of thick spike, at the summit of the stalk.

It is a native of the island Socotora, and many other places. Breynius calls it, *Aloe succotrina angustifolia spinosa flore purpureo*; and Plukenet, *Aloe anaze folio floribus suave-rubentibus*. The juice of the leaves of this plant depurated by standing, and then dried in the sun, is what is called Succotrine Aloes in the shops. An excellent cathartic in use on a multitude of occasions.

2. *Aloe foliis spinosis confertis dentatis vaginantibus*
planis maculatis. **The Hepatic**
The clustered, thick, dentated, and prickly-leaved **Aloe Plant.**
Aloe.

The root is a foot long, and two or three inches in diameter; the leaves are numerous, and stand in a circular manner; they are a foot and half long, three or four inches broad, and an inch, or more, thick; they terminate each in a spine, and are dentated at the edges, and all the denticulations terminate also in smaller spines; they are of a bluish-green colour, and seem as if dusty; the fleshy substance is green, soft, succulent, and of a sweetish taste, but there run through it in all directions a number of vessels, containing a yellow juice, of an intolerable bitterness. The stalk is round, smooth, three feet high, and usually divided into two or three ramifications: the flowers stand in long series; along the tops of these they are yellow, streaked with green, an inch long, and pendulous.

It is a native of most parts of America, and of the East Indies. C. Bauhine calls it, *Aloe vera vulgaris*; others, *Aloe vulgaris*. The depurated juice of this plant, dried in the sun, is what is called in the shops Hepatic Aloes; and the faces of the same juice, dried, make the Caballine Aloes.

The other species of the Aloe are extremely numerous; the more singular are, 1. The spinose, ribbed, African Aloe. 2. The American Aloe, with a very long spine at the end of the leaf. 3. The broad, glaucous-leaved Aloe. 4. The variegated-leaved Aloe, with a few short spines. 5. The very robust, spined Aloe. 6. The very broad, shining-leaved Aloe. 7. The broad, lucid, serrated-leaved, spinose Aloe. 8. The dwarf, variegated Aloe of Ceylon. 9. The short-leaved, spinose, African Aloe: Commelin has described this three times as three species. 10. The patulous, distichous, linguiform-leaved Aloe. 11. The very prickly, deep green-leaved Aloe. 12. The green-flowered, rhomboidal-leaved Aloe. 13. The oval, acuminate-leaved Aloe. 14. The triangular, viscous-leaved Aloe. 15. The triangular-leaved, green and white Aloe.

YUCCA.

THERE is no calyx; the corolla is of a campanulated shape, and formed of six large, oval petals, cohering at their base; or of a single petal, divided almost to the base into so many segments. The stamina are six very short filaments, thickest at top, and reflex; the anthers are small; the germen is oblong, obtusely triquetrous, and longer than the stamina; there is no style: the stigma is trifid, obtuse, perovious, and each of the three segments is bifid: the fruit is an oblong, obtusely triangular capsule, with three furrows; it is formed of three valves, and contains three cells: the seeds are numerous and incumbent, in a double order. The Yucca approaches very near to the aloe, but is absolutely a distinct genus.

1. *Yucca foliis margine integerrimis.*
The Yucca, with even edges to the leaves.

The Indian
Bread Plant.

The root is tuberous and very large, divided into many portions, and covered with a reddish crust, or bark, but white within; the leaves stand in an orbicular manner; they are a foot and half long, three inches broad, and of a bluish-green colour: they are hard, tough, carinated, even at the edges, and terminate in a convoluted spine at the extremity. The stalk is round, thick, smooth, and grows to three or four feet high; toward the top it divides into a number of branches, and on these stand numerous, large, and beautiful flowers; they are white streaked with purple.

It is a native of many parts of America. Ray calls it, *Yucca Peruviana*; C. Bauhine, *Yucca foliis aloes*. A kind of bread is made from the dried root of this plant by the Indians, which much resembles that made from the root of the Cassia.

2. *Yucca foliorum margine crenulato.*
The Yucca, with crenulated leaves.

The root is large, tuberous, and white; the leaves are two feet long, and three inches broad, succulent, thick, and ever-green: they are of a bluish-green, and very lightly crenated at the edges; they rise in an oblique direction from the root, and often bend backwards at their ends: the stalk is round, smooth, ramose, and brownish; the flowers are large, and of a pale flesh colour.

It is a native of America; we have it in some of our stoves. C. Bauhine calls it, *Draconi arbori affinis Americana*.

AGAVE.

THERE is no calyx. The corolla is of a regular figure and erect, composed of a single petal; the tube is long and gibbous; the limb is divided into six segments: the stamina are six subulated filaments, longer than the corolla: the anthers are oblong and incumbent; the germen stands under the corolla: the style is simple, nearly of the length of the stamina: the stigma trifid and obtuse: the fruit is an oblong capsule, marked with three furrows, formed of three valves, and containing three cells: the seeds are numerous, and of an angular figure.

Agave foliis spinoso-dentatis mucronatisque.
The Agave, with spinose, dentate, and mucronated leaves.

Great Ame-
rican Aloe.

The root is very large, oblong, crooked, and, as it were, jointed. The leaves are five feet long, six inches broad, near the base, and two or three inches thick; they are hollowed, and of a bluish-green colour: the extremity terminates in a robust, brown spine, of two inches long; and the edges are beset with spines of the same kind, only smaller, and bent downwards. The stalk is round, as thick as a man's arm, and fifteen feet high. The upper part of this stalk forms a spike of flowers six feet, or more, in length; the flowers are yellow, and stand in clusters on peduncles, growing gradually shorter, in a regular and beautiful manner toward the top, so as to make the whole spike pyramidal.

It

It is a native of many of the warmer parts of America; we have it very common in our gardens, but it rarely flowers. It has been pretended only once in a hundred years; but this is as fabulous as the idle circumstances recorded, as attending the opening of the flowers. C. Bauhine calls it, *Aloe folio in oblongum mucrohem abeunte*; Clusius, *Aloe ex America*.

HEMEROCALLIS.

THERE is no calyx; the corolla is of an infundibuliform figure; the tube is short: the limb is patent; and divided into six somewhat reflex segments: the stamina are six subulated, declinated filaments, of the length of the corolla; the upper ones somewhat shorter than the others: the anthers are oblong, incumbent, and assurgent; the germen is roundish and sulcated; the style is filiform, of the length and situation of the stamina: the stigma is obtusely trigonal and assurgent; the fruit is an ovato-trilobous, trigonal capsule, formed of three valves, and containing three cells: the seeds are numerous and roundish.

This genus comprehends; the *Liliasphodelus* and the *Lilistrum* of Tournefort. In the *Liliasphodelus*, the germen stands within the receptacle of a monopetalous corolla; in the *Lilistrum*, the germen has the same situation in a corolla, more properly hexapetalous.

1. *Hemerocallis scapo ramofo, corollis monopetalis majoribus.* The day
The large, monopetalous-flowered, ramofo-stalked *Hemerocallis*. Lily.

The root is composed of a number of oblong, tuberous bodies, of a yellowish colour on the outside, and white within: the leaves which arise immediately from it are eight inches long, three quarters of an inch broad, and of a bright green: the stalk is round, naked, thick, smooth, and grows to three feet high, and is divided into several ramifications toward the top: the flowers stand along these ramifications, and are of a dusky yellowish red; they are very large, and much resemble those of the red lily; the sides of the petals are undulated and venous; the style is striate.

It is a native of Hungary; we have it in our gardens. C. Bauhine calls it, *Lilium rubrum asphodeli radice*.

2. *Hemerocallis scapo ramofo, corollis monopetalis minoribus.* The yellow,
The smaller, monopetalous-flowered *Hemerocallis*. day Lily.

The root is tuberous and composite; the leaves are four or five inches long, and half an inch broad: the stalk is round, slender, ramofo, and near two feet high: the flowers stand on the ramifications at the top, and are scarce half so large as those of the former: the petals are neither undulated nor venous at the edges, and the colour is a fine bright yellow.

It is a native of Siberia, and many other places. C. Bauhine calls it, *Lilium luteum asphodeli radice*; Tournefort, *Liliasphodelus luteus*.

3. *Hemerocallis scapo simplici, corollis hexapetalis.* Great, white
The simple-stalked *Hemerocallis*, with hexapetalous flowers. Spiderwort.

The root is composed of a great number of large, long, and thick filaments; the radical leaves stand in clusters, and are long, narrow, of a deep green colour, and in-close one another at the base: the stalk is round, thick, firm, green, and a foot, or more, in height: the flowers are numerous, large, and of a snow-white; their anthers only yellow. They stand in a kind of spiked cluster at the top of the stalk, and very much resemble the flowers of the common white lily, except that they are smaller.

It is a native of the Alps, and of some parts of Germany. Tournefort calls it, *Lilistrum flore majore albo*; J. Bauhine, *Phalangium flore lili*; and C. Bauhine, *Phalangium magno flore*.

Class the Sixth. Order the First.

Division the Fifth.

Hexandria Monogynia, with flowers not divided into three segments, and with cups to them.

ACORUS.

THE common receptacle of the fructifications is of the length and shape of a finger, and is covered with floscules. The corolla consists of six obtuse, hollow, lax petals, broadest at top, and, as it were, truncated: the stamina are six filaments, considerably thick, and a little longer than the corolla: the antheræ are thick, didymous, terminatory, and adnate: the germen is gibbous, oblong, and of the length of the stamina; there is no style: the stigma is a prominent point: the fruit is a short, triangular capsule, obtusely acuminate at each end, and contains three cells: the seeds are of an oblong, oval figure.

Of this genus there is only one known species.

ACORUS.

Sweet Flag.

The root is oblong, thick, and jointed; the leaves are two feet long, narrow, compressed, smooth, of a bright green, and terminate in a point: at the base they are scarce so much as half an inch broad, and they grow gradually smaller. Among these there rises a single leaf, thicker and more robust than the rest, furrowed on the surface, and of a paler green; on this grows the spike of flowers: this is brown, and of a kind of chequered surface.

It grows in watery places in many parts of England. Its root is the *Calamus aromaticus* of the shops, though very falsely and improperly so called, there being another *Calamus aromaticus* described by medical writers, which is the stalk of a plant, and to which the name was originally given. The root of this plant is a stomachic and carminative, and is in frequent use.

HEMANTHUS.

THE flowers are disposed in form of a kind of umbel; the involucrem is very large, and composed of six oblong, erect, permanent leaves: the corolla consists of a single, erect petal, divided into six erect, linear segments; the tube is very short and angular: the stamina are six fabulated filaments, inserted into the tube of the corolla, and longer than the corolla; the antheræ are incumbent and oblong: the germen stands below the receptacle: the style is simple, and of the length of the stamina; the stigma is simple: the fruit is a roundish berry, containing three cells; the seeds are single and triquetrous: the involucrem has sometimes more than six leaves.

*Hemantbus foliis lanceolatis.**The lanceolated-leaved Hemantbus.*The Guinea
Orchis.

The root is a single, moderately large, solid bulb, of a depressed figure, and furnished with fibres growing not from its base, but from the top. The radical leaves are oblong, narrow, and pointed at the end: the stalk rises to a foot high; it is green, thick, succulent, and spotted: the leaves stand alternately on it, surrounding it at their bases; they are five inches long, not half an inch broad, and of a fine strong green: the flowers stand at the top in a kind of little umbel; they are large, very beautiful, and of a stellated appearance.

It is a native of Guinea, but we have it in our stoves. C. Bauhine, &c. call it, *Orchis e Guinea*,

APHYL-

APHYLLANTHES.

THE calyx is composed of a number of imbricated, lanceolated spathe; the corolla consists of six petals, of an obversely oval figure, terminating at the base in very narrow unguis, and patent at the limb, forming a kind of tube below it. The stamina are six setaceous filaments, shorter than the corolla; the antheræ are oblong: the germen is trigonal, and turbinated; the style is filiform, and of the length of the stamina: the stigmata are three, and are oblong: the fruit is a turbinated capsule, of a triangular figure, and contains three cells; the seeds are oval.

Of this genus there is only one known species.

APHYLLANTHES.

The root consists of a number of slender, hard, woody, long, and contorted fibres; the radical leaves are very numerous, two inches long, extremely narrow, and very quickly withering. The stalk is round, smooth, without a joint, or knot, naked, and tolerably firm; at it's top stands a single and very beautiful blue flower, arising from a kind of compound, imbricated cup.

It is a native of France. C. Bauhine calls it, *Caryophyllus caruleus Montpelienisum*.

FLAGELLARIA.

THE calyx is a perianthium, divided into six segments: there is no corolla: the stamina are six capillary filaments: the antheræ are tumid; the germen is round, the style is moderately thick, and the stigma divided: the fruit is a roundish berry, containing a single seed.

The perianthium and the fruit, with the want of a corolla, characterises this genus so sufficiently, as to leave no necessity for a further description.

JUNCUS.

THE calyx is a hivalve glume, sometimes serving in common to many flowers, sometimes peculiar to one only: the perianthium is composed of six oblong, acuminate, permanent leaves: there is no corolla, but the perianthium, when fresh and coloured, greatly imitates one: the stamina are six very short, capillary filaments: the antheræ are oblong, erect, and of the length of the perianthium: the germen is triquetrous and acuminate: the style is short and filiform: the stigmata are three, long, filiform, villose, and crooked: the fruit is a covered capsule, of a triquetrous figure, formed of three valves, containing only one cell, in which are a few round seeds.

1. *Juncus culmo nudo stricto capite laterali.*

Round-headed

The naked, slender-stalked *Juncus*, with a lateral head.

Rusli.

The root is composed of a number of long and thick, brown fibres. The stalk rises to two or three feet high; it is round, slender, and somewhat striated, of a deep green colour, and filled with a very lax and spongy pith: three or four inches below the top bursts out the head, or cluster of flowers; it is compact and close, formed of a multitude of flowers, regularly arranged, and, when ripe, is of a pale brown colour.

It is common with us in wet places. C. Bauhine calls it, *Juncus levis panicula non sparsa*.

2. *Juncus culmo nudo stricto panicula laterali.*

Soft

The naked, slender-stalked *Juncus*, with a lateral panicle.

Rusli.

The root is composed of a number of thick, brown fibres. The stalks grow to two or three feet high; they are smooth, naked, shining, soft to the touch, and are filled with a firm and compact pith: six or eight inches from their top burst forth the flowers; they are formed into a lax panicle, not clustered into a head, as in the former, and are of a deep brown colour.

It is common about waters. C. Baubine calls it, *Juncus levis panicula sparsa major*.

3. *Juncus foliis nodoso-articulatis.*
The Juncus, with nodoso-articulated leaves.

The root is a cluster of long, tough fibres, which spread every way under the surface. The stalk is nodose, somewhat compressed, fungous, ramose, and striated; it grows sometimes a foot and a half high, oftener only to four or five inches. The leaves stand singly at the joints; they are long, narrow, pointed at the extremities, and all the way beautifully articulated. The flowers grow five or six together, on short pedicles.

It is a native of England, and is common in boggy places. C. Bauhine calls it, *Gramen juncum folio articulato aquaticum*; J. Bauhine, *Juncus foliaceus capsulis triquetris*.

The other species of this genus are very numerous. The more singular are, 1. The pangent, or sharp-pointed Juncus. 2. The foliaceous Juncus, with a sparsed panicle. 3. The great, reflex-headed Juncus. 4. The small, trifid Juncus. 5. The psyllium-headed Juncus. 6. The broad-leaved Juncus. 7. The dwarf, erect Juncus. 8. The small, round-fruited Juncus. 9. The narrow, hairy, white-flowered Juncus. 10. The least foliaceous Juncus. Authors have divided these into what they call Rushes, and Rush-grasses, from their having, or wanting, leaves, but the fructifications are the same; whence this is a distinction of no foundation in nature.

RICHARDIA.

THE calyx is a perianthium, formed of one leaf, divided into six parts, erect, acuminate, and of about half the length of the corolla: the corolla is of a cylindraceo-infundibuliform shape; it is composed of a single petal: the limb is divided into six parts, erect and acute: the stamina are six scarce visible filaments: the anthers are roundish, small, and placed in the divisions of the corolla: the germen stands below the receptacle: the style is filiform, of the length of the stamina, and divided into three parts at the top: the stigmata are obtuse: there is no pericarpium: the seeds are three, roundish, angular on one side, broadest upward, and gibbous.

It is an American, described by Houston.

BERBERIS.

THE calyx is a perianthium, formed of six oval, hollow leaves, narrow at the base, alternately smaller, coloured, and deciduous: the corolla consists of six roundish, hollow, erecto-patent petals, and is scarce any larger than the cup: the neotarium consists of two roundish, coloured corpuſcules, adhering to the base of every petal: the stamina are six erect, compressed filaments: the anthers are bifid and adnate: the germen is cylindric, and of the length of the stamina: the style is not visible: the stigma is orbiculated, and broader than the germen: the fruit is a cylindric, obtuse, umbilicated berry, containing only one cell: the seeds are two, oblong, cylindric, and obtuse.

Berberis spinis triplicibus.
The Berberis, with triple spines.

The Ber-
berry Bush.

The root is multiseid, woody, and yellow. The shrub is usually ten or twelve feet high, sometimes it is considerably more, and emulates the form of a tree: the spines are very sharp; they grow usually three or four from the same spot, and, with them, the leaves; they are of a pale green colour, an inch and a half long, more than an inch broad, narrow at the base, and grow gradually wider; they are serrated round the edges, and armed with weak spines. The flowers are small and yellow; they stand in long clusters, on pedicles: the berries are red.

It is wild with us in many places. C. Bauhine and others call it, *Berberis dumetorum*. It's root is an aperient; it's fruit a grateful, cooling acid.

CORDIA.

C O R D I A.

THE calyx is a perianthium, formed of a single leaf, tubulated, tridentated, and permanent: the corolla is formed of a single petal, of an infundibuliform shape: the tube is of the length of the cup: the limb is erecto-patent, and divided irregularly into four, five, or six segments: the stamina are a number of subulated filaments, equal to that of the segments of the corolla: the antheræ are simple, and of the length of the tube: the germen is roundish and acuminate: the style is simple, of the length of the stamina, and bifid: the two segments of it are also bifid: the stigmata are obtuse: the fruit is a dry, globose, acuminate drupe, covered with the cup: the seed is a sulcated nut, containing two cells.

It is an American, described by Plumier.

P R I N O S.

THE calyx is a perianthium, formed of one leaf, lightly divided into six lobes, plane, small, and permanent: the corolla consists of a single petal, and is of a rotated form: there is no tube: the limb is plane, and is divided into six oval segments: the stamina are six erect, subulated filaments, shorter than the corolla: the antheræ are oblong and obtuse: the germen is oval, and terminates in a style shorter than the stamina: the stigma is obtuse: the fruit is a roundish berry, much larger than the cup, and containing six cells: the seeds are single, odorous, obtuse, convex on one side, and angulated on the other.

It is an American, figured by Plukenet, 452. 1.

L O R A N T H U S.

THE perianthium of the fruit is a hollow and undivided rim: the perianthium of the flower is an undivided, hollow margin, crowning the germen: the corolla is formed of a single leaf, and is of a sexangular figure, and divided into six nearly equal, linear, revolute segments: the stamina are six subulated filaments, alternately shorter, but about the length of the corolla: the germen is roundish, and stands between the two cups: the style is simple, of the length of the stamina: the stigma is obtuse: the fruit is a roundish, unilocular berry: the seeds are six, convex on one side, and angular on the other.

It is an American, described by Plumier, 37.

P E P L I S.

THE calyx is a campanulated, permanent perianthium, very large, and divided into twelve segments at the rim, which are alternately reflex: the corolla consists of six oval and very minute petals, inserted into the calyx near the verge: the stamina are six short, subulated filaments: the antheræ are roundish: the germen is oval, the style very short, the stigma orbicular: the fruit is a cordated capsule, containing two cells: the seeds are numerous, very small, and triquetrous: the corolla is sometimes entirely wanting.

Of this genus there is only one known species.

P E P L I S.

Water Purslane.

The root is fibrous; the stalks are very slender, three or four inches long, and in great part procumbent, and take root at the joints: they are usually reddish: the leaves stand two at every joint: they are narrow at the base, and terminate in an obtuse extremity: they are smooth, even at the edges, and of a pale yellowish-green colour. The flowers are very small, and of a purplish colour: they stand singly in the axils of the leaves, and have no pedicels.

It is common with us about watery places. Dillenius calls it, *Portula*; Ruppis, *Portulaca aquatica* (guzia); C. Bauhine, *Alfine palustris minor serpyllifolia*.

Class

Class the Sixth. Order the Second.

HEXANDRIA DIGYNIA.

Plants which have in every flower six stamina and two styles.

ORYZA.

THE calyx is a glume, composed of two valves, containing a single flower; it is very small, and the valves are acuminate, and nearly equal in size: the corolla is formed of two valves, obtuse, large, nearly equal, and permanent: the nectarium is composed of two leaves, plane, very small, and situated on the sides of the germen; the leaves of it are narrow at the base, truncated, and deciduous: the stamina are six capillary filaments, of the length of the corolla: the antheræ are bifid at the base: the germen is of a turbinated figure: the styles are two, capillary and reflex: the stigmata are plumose, and are extended lengthway on the styles: there is no pericarpium: the corolla grows to the seed, and becomes of an oblong, oval figure, compressed, thin at the edges, and marked each way with two lines on the sides: the seed is single, large, oblong, obtuse, and compressed.

Of this genus there is only one known species.

ORYZA.

Rice.

The root is composed of a number of fibres; the radical leaves are a foot and a half long, and an inch broad, of a bright green colour, and smooth. The stalk rises to four feet high; it is round, hollow, striated, and jointed; at every joint stands a single leaf, long, thick, green, and narrow: at the summit of the stalk stands a large panicle, formed of many ramose pedicles, supporting the fructifications, which are large, and of a yellowish colour, except the antheræ, which are purplish.

Rice is cultivated in vast abundance in the East for food; it loves a wet soil.

ATRAPHAXIS.

THE calyx is a perianthium, composed of two coloured, permanent leaves, of a lanceolated figure, and placed opposite: the corolla consists of two roundish, sinuated petals, permanent, and larger than the cup: the stamina are six capillary filaments, of the length of the cup: the antheræ are roundish; the germen is compressed: there is no style: the stigmata are two, and capitated: the cup serves the office of a perianthium, shutting up and including the seed, which is single, roundish, and compressed. These characters sufficiently distinguish the *Atraphaxis*, without a farther description.

Class the Sixth. Order the Third.

HEXANDRIA TRIGYNIA.

Plants which have in each flower six stamina and three styles.

RUMEX.

THE calyx is a perianthium, composed of three obtuse, reflex, permanent leaves: the corolla consists of three oval petals; they are larger than the leaves of the cup, otherwise, like them, connivent and coloured: the stamina are six very short, capillary filaments: the antheræ are erect and didymous: the germen is of a turbinated form, but three-cornered: the styles are three, capillary, reflex, and shew themselves from between the connivent petals: the stigmata are large and lacinated: the corolla serves the office of a perianthium; it becomes connivent, and of a triquetrous figure, and incloses a single, triquetrous seed.

This genus comprehends the *Lapathum* and *Acetosa* of authors.

1. *Rumex*

1. *Rumex floribus hermaphroditis, valculis integerrimis granulo notatis.*

**Bloody
Dock.**

The hermaphrodite-flowered Rumex, with undivided, granulated valves.

The root is large, oblong, divaricated, and tough. The leaves are large, ten inches long, and five broad, terminating in a point; they stand on long pedicles, and are full of veins, of a deep blood colour; the pedicles of the leaves are also blood red, and contain a juice which stains the hands, or any thing that it touches, purple. The stalk is four feet high, round, striated, and hollow. The flowers are white, with a cast of red and green, small, and clustered at the top of the branches.

It is a native of Virginia, and many other places. C. Bauhine calls it, *Lapathum folio acuto ruscute*; others, *Lapathum sanguineum*.

2. *Rumex floribus hermaphroditis, foliis hastatis.*

**Common
Sorrel.**

The hermaphrodite-flowered, hastated-leaved Rumex.

The root is slender, divaricated, and tough: the radical leaves stand on long pedicles; they are three inches long, an inch and a half broad, and of a hastated figure. The stalk is striated, slender, and a foot and a half high: the leaves stand singly at the joints. The flowers are large, and of a whitish green colour, with a cast of red; they stand in lax clusters, at the tops of the branches.

It is common in our meadows. C. Bauhine calls it, *Acetosa vulgaris*.

3. *Rumex foliis cordato-sagittatis undulatis.*

Rhubarb.

The cordato-sagittated and undulated-leaved Rumex.

The root is a foot and a half long, and three inches in diameter, of a dusky brownish colour on the surface, and of a bright yellow, variegated with purple, within. The leaves are a foot long, and seven inches broad at the base, where they are cordated, and, as it were, auriculated; they gradually diminish in breadth to the point, where they are terminated obtusely, and often slightly emarginated; they are undulated round the edges, of a bright green colour, and stand on long and very thick pedicles. The stalk is very thick, somewhat compressed, deeply striated, and about three feet high; it has at every joint a leaf, like the radical ones, but smaller, and, from the middle to the top, sends out short branches, on which the flowers stand in little clusters, or tufts, on short pedicles; the flowers are white, and moderately large.

It is a native of China, Tartary, and Siberia; we have it in some gardens. Jussieu calls it, *Rhabarbarum folio oblongo crispo undulato, flabellis sparsis*; others, *Lapathum bardanae folio*.

The root is gathered for use in autumn, sometimes in spring, and is the Rhubarb of the shops.

The other species of *Rumex* are very numerous, but they will be easily distinguished by their names, the general face and manner of growing being almost the same in all. The more singular are, 1. The sharp-leaved *Rumex*. 2. The obtuse-leaved *Rumex*. 3. The golden-flowered *Rumex*. 4. The little, broad-leaved *Rumex*. 5. The narrow-leaved *Rumex*. 6. The broad-leaved, garden *Rumex*. 7. The great water *Rumex*. 8. The sinuated-leaved *Rumex*, called Fiddle Dock. 9. The stinking, maritime *Rumex*. 10. The pellitory-leaved, Egyptian *Rumex*. 11. The *Rumex*, called prickly-seeded, Cretic Beet. 12. The tall, broad-leaved *Rumex*. These are called *Lapatha*, or *Docks*, by authors. Of those called *Acetosa* are, 1. The great mountain *Rumex*. 2. The very long and narrow-leaved *Rumex*. 3. The arum-leaved *Rumex*. 4. The limonium-leaved *Rumex*. 5. The tuberous-rooted *Rumex*. 6. The roundish-leaved *Rumex*. 7. The roundish, emarginated-leaved *Rumex*. 8. The Cretic, prickly *Rumex*, with narrow leaves. 9. The round-leaved, shrubby *Rumex*. 10. The scutated-leaved *Rumex*. 11. The multi-lobed *Rumex*. 12. The round-leaved, Alpine *Rumex*.

SCHEUCHZERIA.

THE calyx is a perianthium, divided into six rude, permanent, oblong, acute, reflexo-patent leaves: there is no corolla: the stamina are six very short, flaccid, capillary filaments: the antheræ are erect, obtuse, very long, and compressed: the germina are three, oval and compressed, and of the size of the calyx: there are no styles; the stigmata are oblong, obtuse at the top, and adhere outwardly to the germen: the fruit consists of three roundish, compressed, inflated, bivalve, reflexo-distant capsules: the seeds are single and oblong: there are sometimes six germina, and as many capsules, but three is the more natural and usual number.

Of this genus there is only one known species.

SCHEUCHZERIA.

The root is creeping, slender, jointed, and fibrated; the radical leaves are five or six in number, three inches long, not much more than an eighth of an inch broad, of a pale green colour, and pointed at the ends. The stalk is round and single; it grows to four or five inches high; near it's bottom there stand two leaves, almost opposite to one another, and, toward the top, others alternately, one at every joint, with a pedicle for the flower, rising from the ale of each; these are all like the radical ones, broadest at the base, where they surround the stalk, and terminate in a point. The flowers stand singly on pedicles, each of an inch long; they are moderately large, and of a greenish colour, with an admixture of yellow.

It is frequent in the mountainous parts of the northern kingdoms; it loves boggy places. Scheuchzer calls it, *Juncoidi affinis palustris*; C. Bauhine, *Juncus floridus minor*.

TRIGLOCHIN.

THE calyx is a perianthium, composed of three leaves, which are roundish, hollowed, obtuse, and deciduous; the corolla consists also of three oval, hollow, obtuse petals, and is very like the cup; the stamina are six scarce visible filaments; the antheræ are the same in number, and are shorter than the corolla: the germen is large; there is no style; the stigmata are three, sometimes six, reflex and plumose; the fruit is a capsule of an ovato-oblong figure, and obtuse; the cells it contains are of the same number with the stigmata; the seeds are single and oblong.

This genus comprehends the *Juncago* of Tournefort.

1. *Triglochin capulis trilocularibus linearibus.* Arrow-headed
The *Triglochin*, with trilocular, linear capsules. *Grass.*

The root consists of a little tuberosity, furnished with a multitude of fibres. The leaves are very narrow, four or five inches long, erect, and of a pale green colour. The stalk is round, simple, and unjointed; two or three of the radical leaves usually surround it a great way: from the middle of the stalk to the top stand the flowers, in a loose spike; they are of a greenish colour, and pendulous.

It is common with us in sea-marshes, where it grows to ten or twelve inches high. C. Bauhine calls it, *Gramen juncum spicatum*, five *Triglochin*.

2. *Triglochin capulis sexlocularibus ovatis.* Sea spiked
The *Triglochin*, with sexlocular, oval capsules. *Grass.*

The root is composed of a cluster of yellowish fibres. The leaves are numerous, four or five inches long, extremely narrow, flat on the upper side, but rounded underneath, and of a dusky green colour. The stalk is round, green, and short. The flowers form a spike of four inches long, reaching from it's top almost to the bottom; they are very small, and purplish. The fruit is a striated, oval capsule.

It is common in our salt-marshes. Clusius calls it, *Gramen marinum spicatum*; C. Bauhine, *Gramen spicatum alterum*.

COLCHICUM.

COLCHICUM.

THERE is no calyx, unless a few vague spathæ are to be understood as such; the corolla is divided into six segments; the tube is angular, and radicated; the segments of the limb are of a lanceolato-oval figure, concave and erect: the stamina are six subulated filaments, shorter than the corolla; the anthers are oblong, incumbent, and formed of four valves; the germen is buried within the root: the styles are three, filiform, and of the length of the stamina: the stigmata are reflex, and furrowed; the fruit is a capsule, formed of three lobes, connected intirely by a suture; the shape obtuse; the cells in it three in number; the seeds numerous, of a roundish figure, and rugose; the pistil is sometimes only trifid at top, sometimes simple.

1. *Colchicum foliis lanceolatis planis erectis.* Meadow
The Colchicum, with plane, erect, lanceolated leaves. Saffron.

The root is about an inch and a half long, more than an inch in breadth, somewhat compressed, turbinate toward the top, but, in the lower part, terminating in a broad end, like a nail, and sending thence a number of fibres; it is covered with several coats, or husks, of a blackish colour, and has usually a number of small, lateral bulbs adhering to it; internally it is white, and full of a milky juice. The flower appears in autumn: it is extremely beautiful, an inch and a half long, exclusive of the tube, which is smooth and delicate. The flower is of a purplish white, and the segments are each more than an inch broad, narrower at the base than in the middle, and terminate in a point. The leaves appear in the spring, and perish before the next flowering season; they are five or six inches long, an inch and a half broad, of a deep green colour, and pointed at the ends.

It is a native of our meadows, but not common; I found it some years since abundantly near Calne in Wiltshire. C. Bauhine calls it, *Colchicum commune*; others, *Colchicum Anglicum purpureum et album*.

The other species of *Colchicum* are numerous, and the varieties of them from culture almost innumerable; these have been described as species also by some writers, and have greatly swelled the list. The principal really distinct ones are, 1. The spring Colchicum, with a simple pistil, trifid at the end. 2. The many-flowered, smaller, white Colchicum. 3. The broad, white hellebore-leaved Colchicum. 4. The broad-leaved Colchicum, with tessellated flowers. 5. The narrower-leaved, variegated, Chinese Colchicum. 6. The little-flowered, narrow-leaved, mountain Colchicum. 7. The very narrow-leaved, saffron-flowered, meadow Colchicum.

MELANTHIUM.

THE female flower has no calyx; it is composed of five petals, of an ovato-lanceolate figure, with thin, linear ungues, longer than the whole petals beside: the nectarium is a spot of a cordated form, situated near the inner base of the limb of the petals, and from this rises a setaceous filament, of the length of the petal, or nearly so: the germen is trigonal; the styles are three, and crooked; the stigmata are obtuse; the fruit is a capsule, of an ovato-triangular figure; the angles are compressed; it contains three cells, and in each several oblong, compressed, membranaceous seeds.

These characters sufficiently distinguish the *Melanthium*, without a farther description.

MEDEOLA.

THERE is no calyx, but the corolla is so like one that it has been mistaken for it: the corolla consists of six petals, of an ovato-oblong figure, equal, patent, and revolute: the stamina are six subulated filaments, of the length of the corolla: the anthers are incumbent; the germina are three in number, and corniculated, and they terminate in styles: the stigmata are thick, and bent backward: the fruit is a berry of a roundish figure, divided into three parts, containing three cells, and, in each, a single cordated seed.

These characters sufficiently distinguish it, without a farther description.

MENISPERMUM.

MENISPERMUM.

THE calyx is a deciduous perianthium, composed of six ovato-oblong leaves, erecto-patent, and of the length of the corolla: the corolla consists of six ovato-oblong, obtuse, hollow petals, erecto-patent, as the leaves of the cup: the stamina are six very short filaments; the antheræ are simple, and shorter than the corolla: the germina are three, suboval, and terminate in as many patenti-reflex styles, of the length of the corolla; the stigmata are obtuse and emarginated: the fruit is composed of three oval berries, each containing a single cell, and in it a large, single, lunulated, compressed seed.

This is the general number of the parts of fructification, but they vary extremely in this genus.

Menispermum foliis peltatis angulosis.

The peltated and angular-leaved Menispermum.

Virginian

Ivy.

The root is large, woody, and divaricated; the stem is woody, round, and slender, and supports itself by means of trees and bushes; in this manner it grows to a great height: the leaves stand singly on long pedicles, inserted not at the edge, but near the center; they are oblong, angulated, and somewhat resemble those of the common great convolvulus: the flower is small; the fruit composed of three moderately large berries. It is frequent in North America. Plukenet calls it, *Hedera monophyllos convolvuli foliis Virginiana*.

SAURURUS.

THE calyx is a permanent perianthium, formed of a single leaf, oblong, coloured, and lateral; there is no corolla: the stamina are six long, capillary filaments, three on each side, and placed opposite: the antheræ are oblong and erect; the germen is of an oval figure, and formed of three lobes; there is no style: the stigmata are three, obtuse and permanent: the fruit is an oval berry, with a single cell; the seed is single and oval.

Saururus foliis cordatis petiolatis, spicis solitariis recurvis.

The cordated, petiolated-leaved Saururus, with single crooked spikes.

Heart-leaved Li-
zard's Tail.

The root is spreading and whitish; the stem is ridged, solid, and considerably thick, but not robust enough to support itself erect: the leaves stand singly at the joints on pedicles of three quarters of an inch long; they are three inches, or more, in length; near two and a half in diameter, and somewhat resemble those of our black bryony, being cordated at the base, and terminating in a point: The spikes are slender, five or six inches long, and composed of very small flowers of a yellowish colour; they grow singly, opposite to the leaves.

It is a native of Virginia and Maryland. Ray calls it, *Saururus Marilandicus folio cordato*; Plukenet, *Serpentaria repens folio bryonine nigra*.

2. *Saururus foliis ternatis spicis terminatricibus.*

The ternate-leaved, terminatory-spiked Saururus.

Trifoliate Li-
zard's Tail.

The root is composed of a number of fibres, long, complicated, and ramose; the stalk is striated, bairy, firm, and bard, but does not support itself erect, but climbs on trees in the manner of our ivy. The leaves stand three at a joint; they are of an oval figure, half an inch long, and nearly as much in diameter, a little hairy, especially about the edges, and marked with three large, longitudinal ribs. The extremities of the branches are terminated by long spikes of flowers, three inches in length, and scarce a sixth of an inch in diameter, much resembling the tail of a rat.

It is a native of Jamaica. Plumier calls it, *Saururus hederaceus triphyllus*.

The

The other species to be mentioned are, 1. The round-leaved, creeping Saururus. 2. The ivy-leaved Saururus, with spotted stalks. 3. The short-frited, plantain-leaved Saururus. 4. The little, procumbent Saururus, with thick, heart-fashioned leaves. 5. The great, cordated-leaved, tree Saururus, called St Maria leaves. 6. The low Saururus, with a fleshy, pointed leaf. 7. The great, arborefcient Saururus, with round, umblicated leaves. 8. The pendulous-spiked Saururus. 9. The short-spiked, Surinam Saururus.

Class the Sixth. Order the Fourth.

HEXANDRIA TETRAGYNIA.

Plants which have six stamina and only four styles in the flower.

Of this order there is only one known genus.

PETIVERIA.

THE calyx is a permanent perianthium, composed of four erect, linear, obtuse, equal leaves: there is no corolla; but the calyx, being coloured, has much the appearance of one. The stamina are six erect, equal, subulated filaments, of the length of the cup; the anthers are simple: the germen is compressed and oblong; the styles are four in number, subulated, and placed in a right line: the stigmata are obtuse and permanent: there is no pericarpium but the crust of the seed: the seed is oblong, single, narrowest at the bottom, broader at the top, and flattened, emarginated, and armed with the four styles, become rigid and acute, and turned back; the intermediate two are longest.

It is an American, described by Plumier.

Class the Sixth. Order the Fifth.

HEXANDRIA POLYGYNIA.

Plants which have in every flower six stamina and a great number of styles.

Of this order also there is only one known genus.

ALISMA.

THERE are various, trifoliate, acute involucria: the perianthium is composed of three oval, hollow, permanent leaves: the corolla consists of three large, roundish, plane, and very patent petals: the stamina are six subulated filaments, shorter than the corolla; the anthers are roundish: the germina are numerous; the styles are simple; the stigmata are obtuse: the fruit consists of capsules arranged together, in a roundish or trigonal form; the seeds are single and small.

This genus comprehends the Damasonium of Tournefort, and the Alisma of Dillenius. In the Damasonium, Tournefort mentions six large, distinct, acuminate capsules; in the Alisma, Dillenius mentions numerous small and obtuse ones.

1. *Alisma fructu obtuso, trigono*
The obtuse, trigonal-fruited Alisma.

**Great Water
Plantain.**

The root is composed of a great number of thick, whitish fibres. The radical leaves stand on pedicles, three or four inches long; they are of a suboval, acuminate figure, three inches long, and two broad, smooth, of a pale green, and even at the edges: the stalk grows to two or three feet high; it is round, thick, single, and sends off on every side a multitude of branches; they are small, and are divided at their extremities into numerous others, and on these stand the flowers, which are moderately large, and of a reddish white.

The plant is common about waters. C. Bauhine calls it, *Plantago aquatica latifolia*; and, as it sometimes has its leaves narrower than ordinarily, he calls that variety, *Plantago aquatica angustifolia*; others call it, *Plantago aquatica major*, including both varieties under that name.

2. *Alisma fructu globose undique echinato.*
The globose and echinated-fruited *Alisma*.

Little Water
Plantain.

The root is composed of a number of white, thick, complicated fibres: the leaves stand on slender pedicles, two or three inches long; they are oblong, narrow, smooth, of a pale green, and undivided at the edges: the stalk is slender, hollow, naked, and a foot, or more, in height; it sends out a great number of short branches, near the top, and on these stand numerous, small, whitish flowers, with yellow unguis; the heads which succeed these are roundish and echinated; those of the former species are disposed into a trigonal form.

This is common also in wet places. Ray calls it, *Plantago aquatica minor*.

The other species are, 1. The great, trigonal-headed, narrow, and long-leaved *Alisma*; and, 2. The low, starry-headed *Alisma*.

Class the Seventh.

HEPTANDRIA.

Plants which have seven stamina in every flower.

Of this class there are only two genera, and these have both only a single style in the flower.

HEPTANDRIA MONOGYNIA.

TRIENTALIS.

THE calyx is a permanent perianthium, formed of seven narrow, lanceolated, pointed, patent leaves: the corolla is plane and stellated; it consists of a single petal, divided into seven segments, and that so deeply, that they cohere only by their unguis; they are of an ovato-lanceolate figure, and somewhat longer than the calyx: the stamina are seven capillary filaments, of the length of the cup, and inserted into the unguis of the corolla: the anthers are simple: the germen is globose; the style is filiform, and of the length of the stamina: the stigma is capitated; the fruit is a dry, globose berry, having only one cell, and covered with only a very thin crust, which bursts irregularly: the seeds are few in number and angulated; the receptacle is very large, and is hollowed for the reception of the seeds. The parts of fructification, though usually seven in this plant, yet vary sometimes from that number.

There is only one known species of it.

TRIENTALIS.

The root consists of a number of long, white fibres; the radical leaves are oval, pointed, and an inch and a half long: the stalk is round, smooth, slender, and about four or five inches high. It is naked to the top, where there stand six or seven leaves in a kind of circle; they have short pedicles, and are of the figure of the radical ones, but smaller, and more pointed, and of a pale green colour. At the base of these there are sometimes two or three small and roundish leaves, of a brownish colour, and and from the center of them rise usually two pedicles, slender, of a reddish colour, and near two inches long, and on the summit of each of these stands a single and very beautiful stellate white flower.

It is a native of England, but is scarce with us: in Germany, Sweden, and Denmark, it is more common. Ray calls it, *Alsinanthemos*; C. Bauhine, *Pyrola aliflora*; J. Bauhine, *Herba trientalis*.

ESCLUSUS.

E S C U L U S.

THE calyx is a small, ventricose perianthium, formed of a single leaf, divided into five parts at the extremity. The corolla consists of five roundish petals, plane and patent, their edges plicated or undulated; their ungues very narrow, inserted into the calyx, and equally coloured: the stamina are seven or eight subulated, declinated filaments, of the length of the corolla; the anthers are surgent: the germen is roundish; the style small; the stigma acuminate: the fruit is a roundish, echinated, coriaceous capsule, formed of three valves, and containing only one cell: the seeds are two, and globose; often indeed there is formed only one, but it is from accident; two are always the intent of nature.

This genus comprehends the Hypocastanum of Tournefort, and the Esculus and Pavia of Linnaeus.

1. *Esculus floribus heptandris.*

The Esculus, with seven stamina in the flower.

**The Horse-
Chefnut.**

The root is brachiated and spreading; the tree very large and ramose; the leaves are palmated; each is composed of seven, others annexed to the same pedicle; these are of an oblong figure, broad, rough, and indented at the edges: the flowers are very beautiful; they stand in considerable numbers, on separate peduncles annexed to common pedicles, arising from the axils of the leaves; they are large and white, with a tinge of flesh colour: the fruit is echinated and very large; the chefnut contained in it is like the common kind, but larger, rounder, and of a disagreeable taste.

It is a native of the East; we had it brought into Europe in the year 1550, since which time it is common in our gardens, &c. Tournefort calls it, Hypocastanum vulgare; C. Bauhine, Castanea multifido folio.

2. *Esculus floribus octandris.*

The Esculus, with eight stamina in the flower.

**The Scarlet
Horse-Chefnut.**

The root is brachiated; the leaves are compound, like those of the common horse-chefnut, but the single leaves smaller and narrower: the flower is very beautiful, and of a bright red; it somewhat resembles a monopetalous, bilabiated flower, though in reality formed of five petals, as that of the former.

It is a native of the East; but we have it in our gardens. Boerhaave calls it, Pavia; Plumier, Ricinoides Americana castaneæ folio; Plukenet took it to be the sea monna of Piso, but erroneously.

Class the Eighth.

O C T A N D R I A.

Plants which have in every flower eight stamina.

Of these some have only one style, some have two, some three, some four, and some more numerous ones.

THE several genera will hence therefore be arranged into five orders: The first containing such as have only one style; the second, such as have two; the third, such as have three, and so on.

Order

Order the First.

OCTANDRIA MONOGYNIA.

Plants which have in every flower eight stamina and only one style.

TROPÆOLUM.

THE calyx is a deciduous perianthium, composed of a single leaf, divided into five segments, erecto-patulous, acute, coloured, and the two lower ones narrower than the rest. The corolla consists of five roundish petals, inserted into the divisions of the cup; the two upper petals are sessile, the three others have very long and barbed unguis: the stamina are eight short, subulated, declinated, unequal filaments; the antheræ are erect, oblong, quadrilocular, and assurgent: the germen is roundish, striated, and formed of three lobes: the style is simple, erect, and of the length of the stamina: the stigma is trifid and acute: the fruit consists of three capsules convex, sulcated, and striated on one side, and angular on the other: the seeds are three, gibbous on one side, and angulated on the other, but upon the whole somewhat roundish, and striated deeply.

This genus comprehends the *Cardaminum* of authors.

1. *Tropæolum foliis subquingulobis, petalis obtusis.*
The obtuse-petaled Tropæolum, with subquingulobate leaves.

**Indian
Cress.**

The root is small, oblong, and divaricated: the stalks are slender and weak; they are to be supported by sticks or bushes, otherwise they trail upon the ground. The leaves stand singly at the joints; they are an inch and half, or more, in diameter, and have each a pedicle of five inches long, reddish, slender, and tortile; this is inserted into the middle of the leaf, not at the side, and the figure of the leaf is peltate; approaching to round, but, when most perfect, lightly sinuated into five lobes. From the axils of the leaves arise the pedicles of the flowers; they are long, slender, and contorted; the flower is large, and of an extremely beautiful yellow, with an admixture of scarlet.

It is a native of Peru; it was brought into Europe in 1684, and is now common in our gardens. Tournefort calls it, *Cardaminum ampliote folio et majori flore*; Ray and others, *Nasturtium Indicum*.

2. *Tropæolum foliis integris, petalis acuminato-setaceis.*
The Tropæolum, with undivided leaves, and acuminato-setaceous petals.

**Little Indian
Cress.**

The root is fibrous; the stalks are very slender, weak, and tortuous: the pedicles of the leaves are long and slender; the leaves themselves small, round, and not at all sinuated at the edges: the flowers are of about half the size of those of the former, and the petals acuminated: their colour is a pale yellow.

It is a native of Peru; but we have it, with the other, in some gardens. C. Bauhine calls it, *Nasturtium Indicum minus*; Tournefort, *Cardaminum minus*.

A C E R.

THE calyx is a permanent perianthium, composed of a single leaf, plane and entire at the base, but divided toward the top into five acute, coloured segments: the corolla is scarce larger than the cup; it consists of five oval, obtuse, patent petals, broadest outwardly. The stamina are eight short, subulated filaments: the antheræ are simple; the farina cruciform: the germen is compressed, and is immersed in a large convex, perforated receptacle: the style is filiform, and grows taller, as the flower remains open: the stigmata are two, acuminated, slender, and reflex. The fruit consists of a number of capsules, equal to that of the stigmata; they grow together

ther at the base, and are compressed, roundish, and each is terminated by a very large, membranaceous ala: the seeds are single, and roundish: at the first opening of the flower in this genus the stigmata only appear; the style grows in length afterwards. In some species the corolla is scarce distinct from the calyx, and the stamina are long. The flowers are often of two kinds in the same cluster; all, indeed, are hermaphrodites, but, in the lower ones, the antheræ never burst, but the pistil becomes a fruit; in the upper ones the antheræ burst, and the farina is shed, but the pistils decay.

1. *Acer foliis quinquelobis acutis, obtuse ferratis, petiolis canaliculatis:*

The *Acer*, with quinquelobate and obtusely dentated leaves.

The Syca-
more Tree.

The root is large and brachiated; the tree very large and beautiful; the bark of the young shoots reddish; the leaves are very large and broad, divided into five lobes, serrated at their edges, and of a dark green colour on the upper side, but paler underneath, and usually somewhat whitish and hoary. The flowers are very small, and of a greenish-white colour. The fruit is large and beautifully variegated with green and purple, in various degrees.

It is a native of Germany; it is common with us in plantations: We commonly, but very improperly, call it the Sycamore; it's proper name is the larger Maple. C. Bauhine calls it, *Acer majus*.

The other species of the *Acer* are, 1. The common, small *Acer*, or Maple, of our hedges. 2. The *Acer* with finely-divided leaves. 3. The great-leaved, Virginian *Acer*. 4. The broad, platanus-leaved *Acer*. 5. The small, sugar *Acer*. 6. The rounder-leaved *Acer*, the *Opalus* of the Italians. 7. The narrower-leaved *Acer*.

DODONÆA.

THE calyx is a perianthium, divided into three erect, equal, oval segments; there is no corolla: the stamina are eight extremely short filaments; the antheræ are oblong, but scarce of the length of the calyx; the germen is triquetrous, and longer than the cup; the style is subulated, and very long; the stigma is simple; the fruit is a roundish capsule, with three cells, and with prominent, inflated angles, in the same number; the seeds are single.

Burman refers this to the *Carpinus*, Plinnier to the *Staphylodendron*, but erroneously. The flower often varies in the addition of a third part to the number of the segments, &c.

These characters sufficiently distinguish the *Dodonæa*, without a farther description.

GRESLEA.

THE calyx is a perianthium, formed of a single leaf, of a turbinate form, erect, campanulated, and divided into four segments: the corolla consists of four extremely minute petals, of an oval figure, arising from the denticulations of the cup, and scarce larger than they: the stamina are eight extremely long, subulated, erect filaments: the antheræ are simple and erect; the germen is oval, the style is filiform, and of the length of the stamina; and the stigma is simple.

Of this genus there is only one species, which is sufficiently distinguished by these characters, without a farther description.

ALLOPHYLLUS.

THE calyx is a perianthium composed of four leaves, of an orbicular figure, and two opposite ones, smaller than the others: the corolla consists of four petals; the stamina are eight slender filaments; the antheræ are oblong; the germen is didymous.

These characters sufficiently distinguish the *Allophyllus*, without a farther description.

JAMBOLIFERA.

THE calyx is a perianthium, composed of a single leaf, divided into four short segments at the end: the corolla consists of four petals, and is of an infundibuliform shape: the stamina are eight stitted filaments.

These characters sufficiently distinguish the Jambolifera, without a farther description.

MIMUSOPS.

THE calyx is a perianthium, composed of eight leaves: the corolla consists of eight petals: the stamina are eight slender filaments: the fruit is a drupe.

These characters sufficiently distinguish the Mimusops, without a farther description.

LAWSONIA.

THE calyx is a small, permanent perianthium, divided into four segments: the corolla consists of four petals, plane, patent, and of an ovato-lanceolated figure: the stamina are eight filiform filaments, of the length of the corolla; they stand by pairs, within the petals: the antheræ are roundish; the germen is roundish; the style is simple, permaœent, and of the length of the stamina; the stigma is capitated: the fruit is a globose capsule, terminating in a point, and containing four cells; the seeds are numerous, angular, and acuminate.

There is but one known species of this genus, which is sufficiently distinguished by these characters, without a farther description.

R H E X I A.

THE calyx is a permanent perianthium, formed of a single leaf, oblong, tubulated, ventricose toward the bottom, and divided into four segments at the mouth: the corolla consists of four petals, roundish, patent, and inserted into the calyx: the stamina are eight filiform filaments, longer than the calyx, and inserted into it: the antheræ are oblong and declinate: the germen is roundish; the style is simple, and of the length of the stamina; the stigma is thick and oblong: the fruit is a roundish capsule, formed of four valves, containing four cells, and contained in the belly of the cup; the seeds are numerous and roundish; the cup, in some, is smooth, in others it is elegantly stellated with a kind of short hairs.

OENOTHERA.

THE calyx is a deciduous perianthium, formed of a single leaf; it's tube is cylindric, long, and erect; it's limb is divided into four oblong, acute, reflex segments: the corolla consists of four plane petals, of an obversely cordated figure, of the size of the segments of the cup, and inserted into the divifures of them: the stamina are eight crooked, subulstated filaments, shorter than the corolla, and inserted into the tube of the calyx: the antheræ are oblong and incumbent: the germen is cylindric, and placed under the tube of the cup; the style is filiform, of the length of the stamina; the stigma is divided into four parts, thick, obtuse, and reflex: the fruit is a cylindric capsule, with four low angles; it is formed of four valves, and contains four cells: the seeds are numerous, and angulated; the receptacle is columnar, free, and of a quadragonal form.

This genus comprehends the *Onagra* of Tournefort.

OEnothera foliis ovato-lanceolatis planis.
The *OEnothera*, with plane, lanceolated leaves.

The
Pimrose.

The root is oblong, white, and of the thickness of a finger. The stalk is robust, brownish, spotted toward the top, and downy; it is round toward the bottom, but grows angulated, as it sends out branches higher up; it grows to four feet high, erect, firm,

firm, and rigid. The leaves are three inches long, an inch broad, sinuated, and dentated at the edges; they stand alternately on the stalk, and close. The flowers are very large, and of a beautiful yellow colour, in shape much like those of the primrose.

It is a native of Virginia; it was brought into England in 1680, and is now common in our gardens. C. Bauhine calls it, *Lyfimachia lutea corniculata*; Morison, *Lyfimachia non papposa lutea Virginica*.

The other species are, 1. The narrow-leaved, long-horned *Oenothera*. 2. The little-flowered, willow-leaved *Oenothera*. 3. The betony-leaved, rough-fruited *Oenothera*. 4. The arsmart-leaved, little-flowered *Oenothera*. 5. The nerium-leaved *Oenothera*.

EPILOBIUM.

THE calyx is a deciduous perianthium, composed of four oblong, acuminate, coloured leaves: the corolla consists of four roundish, patent petals, somewhat emarginated: the stamina are eight subulated filaments, alternately shorter; the anthers are oval, compressed, and obtuse: the germen is cylindric, very long, and placed below the receptacle: the style is filiform; the stigma is divided into four parts, thick, obtuse, and revolute: the fruit is an extremely long, cylindric, striated capsule, formed of four valves, and containing four cells; the seeds are numerous, oblong, and coronated with a downy matter; the receptacle is very long, of a tetragonal figure, square, free, flexible, and coloured.

This genus comprehends the *Chamænerion* of Tournefort, the *Lyfimachia filiquosa* of others. In some species the stamina and pistil are erect, in others they are declinate, and in some of these the declination is sideways, in others downwards.

1. *Epilobium floribus difformibus, pistillo declinato.* **Rose-bay Willow-herb.**
The *diform-flowered Epilobium*, with a declinated pistil.

This is the tallest and most beautiful of all this genus. It's root is white, oblong, thick, and creeping. The stalk is thick, smooth, furrowed, and variegated with green and purple. The leaves stand very close; they are three or four inches long, scarce more than half an inch broad, small at the base, and terminate in a point. The flowers are large, and of a bright red colour, and stand on pedicles in a regular order, so as to form a tall, beautiful spike, on the top of the stalk.

It is a native of England, but not common; we have it in Cane-wood near Highgate. C. Bauhine calls it, *Lyfimachia Chamænerion dicta, latifolia*; others, *Onagra* and *Chamænerion*.

2. *Epilobium foliis lanceolatis serratis.* **Common purple Willow-herb.**
The *Epilobium*, with lanceolated, serrated leaves.

The root is creeping, moderately thick, and of a reddish colour. The stalk is round, hairy, thick, and four feet high. The leaves are four inches long, near three quarters of an inch broad, pointed at the ends, serrated about the edges, of a pale green colour, and somewhat hairy. The flowers are of a pale purple colour; they grow on single pedicles, from the size of the leaves toward the top of the plant, and stand on long pods: the tops of the plant have a very singular, agreeable smell.

It is common about waters. C. Bauhine calls it, *Lyfimachia filiquosa hirsuta parvo flore*, and describes a variety of it with the flowers larger, as another species; in this error most others also follow him.

The other species of *Epilobium* are, 1. The great, smooth *Epilobium*. 2. The narrow-leaved *Epilobium*, with blid petals. 3. The chickweed-leaved *Epilobium*. 4. The trifoliate *Epilobium*. 5. The shining, denticulated-leaved *Epilobium*. 6. The prunella-leaved *Epilobium*. 7. The almond-leaved, smooth *Epilobium*. 8. The organum-leaved *Epilobium*.

ERICA.

THE calyx is a permanent perianthium, composed of four oval, erect, coloured leaves, larger than the flower: the corolla consists of a single petal, erect, and divided into four segments at the edge: the stamina are eight capillary filaments, affixed to the receptacle; the anthers are bicornate: the germen is roundish; the style is filiform, declinate, and longer than the stamina: the stigma is coronated, of a quadrangular figure, and divided into four parts: the fruit is a roundish capsule, smaller than the cup, covered, formed of four valves, and contains four cells: the seeds are numerous and very small. There are some species which have a double calyx.

1. *Erica foliis quadrifariam imbricatis, triquetris, glabris, erectis, corollis inequalibus calyce brevioribus.*

The quadrifariously imbricated-leaved Erica, with short corollæ.

Common
Heath.

The root is woody and brachiated; the stem woody, thin, and covered with a pale brown bark: it grows to about two feet high, and is very ramose. The leaves are oblong and slender, of a square figure, composed of four series of small leaves, and green all the winter. The flowers are small, and of a bright red colour, and stand in a beautiful order on the tops of the branches.

It is common every-where on heaths. C. Bauhine calls it, *Erica vulgaris glabra*.

2. *Erica foliis subulatis, ciliatis, quaternis, corollis globoso-ovatis, terminatricibus confertis.*

The subulated, ciliated, four-leaved Erica, with globose flowers terminating the branches.

Beesom-
Heath.

The root is extremely long, divaricated, tough, and woody; the stem is also woody, and is usually in part procumbent. The leaves are somewhat broad, short, and of a dark colour; they stand four at a joint, round the stalks, which are a little hairy. The flowers are large, of a fine bright red colour, and of an oval figure, approaching to roundness; they are placed in clusters at the tops of the branches.

It is frequent with us on heaths. C. Bauhine calls it, *Erica ex rubro nigrescens scoparia*; Ruppian, *Erica spuria*.

The other species are, 1. The tall, white Erica. 2. The long-leaved, purple Erica. 3. The juniper-leaved, many-flowered Erica. 4. The greenish-flowered Erica. 5. The great Erica, with deciduous leaves. 6. The arbutus-flowered Erica. 7. The ternate-leaved, procumbent Erica. 8. The procumbent, herbaceous Erica. 9. The myrtle-leaved Erica. 10. The great, short-leaved Erica. 11. The short, capillaceous-leaved Erica.

DAPHNE.

THERE is no calyx: three flowers usually proceed from the same germen: the germen consists of a single leaf: the tube is cylindric, imperforated, and larger than the limb: the limb is divided into four oval, acute, plane, patent segments: the stamina are eight very short filaments, inserted into the tube, the alternate ones lower: the anthers are roundish, erect, and contain two cells: the germen is oval; there is no style; the stigma is depressed, plane, and capitated: the fruit is a roundish berry, containing only one cell; the seed is single, round, and fleshy.

1. *Daphne floribus sessilibus infra folia elliptico-lanceolata.*
The sessile-flowered Daphne, with elliptico-lanceolate leaves.

Mysercon.

This is a shrub of three or four feet high. The root is long, thick, and divaricated. The stem is small and tough; it's bark thin, greyish, and tough, and, under this, there is a green one. The flowers appear before the leaves; they are small, and of a beautiful pale

pale red colour, very numerous, and make a very beautiful appearance. The leaves grow several from the same tubercle; they are long, narrow, soft, and of a pale green colour; the berries are red.

It is a native of many parts of Europe, but not of England. C. Bauhine calls it, *Laureola folio decidua, flore purpureo, officinis laureola femina*; others, *Chamaelea* and *Mezereon*.

2. *Daphne floribus racemosis lateralibus, foliis lanceolatis integris.*

The racemous, lateral-flowered *Daphne*, with undivided, lanceolated leaves.

Spurge
Laurel.

This rises to a shrub of four feet high; its leaves remain green all winter; its root is long and divaricated; the stem as thick as a man's thumb, and covered with a smooth bark; toward the top it divides into several branches, and, on the upper parts of these, stand clusters of long, narrow, thick, glossy, dark green leaves and flowers; these are small, and of a yellowish-green colour.

It is common in our woods. C. Bauhine calls it, *Laureola semper virens flore viridi*; others, *Laureola* and *Laureola mas*.

Both these species are strong cathartics, but they are too rough to be given with safety.

G N I D I A.

THE calyx is a coloured perianthium, of an infundibuliform shape, and formed of a single leaf: the tube is very long, and filiform: the limb is divided into four parts, and plane: the corolla consists of four plain, sessile petals, shorter than the cup, and inserted into it; the stamina are eight erect, setaceous filaments, about the length of the flower, and their antheræ are simple: the germen is oval; the style is filiform, of the length of the stamina, inserted into the side of the germen: the stigma is capitated, and hispid; there is no pericarpium: the seed is single, oval, and obliquely acute, and is retained in the bottom of the cup.

This comprehends the *Struthia* of Van Royen.

L A C H N Æ A.

THE calyx is a permanent, one-leaved perianthium: the tube is long and slender; the limb divided into four unequal parts; the upper segment is erect and small, the other three are reflex, and the intermediate one the largest; there is no corolla; the stamina are eight setaceous filaments, erect, and of about the length of the corolla; the antheræ are simple; the germen is oval; the style is filiform, of the length of the stamina, inserted into the side of the germen, and its stigma capitated and hispid: there is no pericarpium; but the seed, which is single, oval, and obliquely acute, remains in the bottom of the cup.

These characters sufficiently distinguish the *Lachnæa*, without a farther description.

P A S S E R I N A.

THE calyx is wanting; the corolla is of very short duration; it is composed of a single petal: the tube is cylindric, slender, and ventricose below the middle: the limb is patent, and divided into four parts; the segments are oval and obtuse; the stamina are eight setaceous filaments, of the length of the limb, and are inserted into the top of the tube: the antheræ are of an oval figure, and erect; the germen is oval, and stands within the tube of the corolla; the style is filiform, and grows from one side of the top part of the germen, and is of the length of the tube of the corolla: the stigma is capitated, and is all over hispid: the fruit is a coriaceous capsule, of an oval figure, with only one cell: the seed is single, oval, pointed at each end, with oblique extremities.

These characters sufficiently distinguish the *Passerina*, without a farther description.

STELLERA.

THE *Stellera* has no calyx; the corolla is deciduous, and is formed of a single petal, and divided into four segments, including the stamina, which are eight slender, short filaments; the antheræ are roundish; the fruit is a single, naked seed.

These characters sufficiently distinguish the *Stellera*, without a farther description.

SANTALUM.

THE calyx is a mere margin, coronating the germen, and slightly quadridentated; the corolla consists of a single petal, of a campanulated form; the limb is plane, quadrid, and acute; the stamina are eight filaments, inserted into the top of the corolla, and alternately shorter; the antheræ are simple; the germen is turbinate, and placed under the receptacle of the flower; the style is of the length of the stamina; the stigma is simple; the fruit is a berry.

Of this genus there is only one known species.

SANTALUM. The yellow and White Saunders Tree.

The root is large and brachiated. The tree grows to forty or fifty feet high, and is very ramose; its bark is of a deep brown colour; the outer part of the wood is white, the heart yellow. The leaves stand in an irregular manner on the branches; they are pinnated; the pinnae are usually three pair and an odd one, each an inch and a half long, three quarters of an inch broad, thick, of a fine green colour, and sweet smell, when bruised. The flowers are of a beautiful blue colour; the fruit is a berry of the size of our cherries.

It is a native of the East Indies, and furnishes us with the white and yellow Saunders of the shops, the first being the outer part of the wood, the latter the heart; they are both esteemed cordial and cephalic. The red Saunders of the shops is the wood of a siliquose tree, of a very different class from this; nor are the woods, indeed, at all alike; one would wonder how they came by the same name.

MEMECYLUM.

THE calyx is a margin, coronating the germen; the corolla consists of four petals; the stamina are eight slender filaments; the antheræ are tumid; the germen is roundish; the fruit is a berry.

These characters sufficiently distinguish the *Memecylum*, without a farther description.

VACCINIUM.

THE calyx is a very small, permanent perianthium, standing on the germen; the corolla is formed of a single petal, of a campanulated form, divided into four revolute segments at the edge; the stamina are eight simple filaments; the antheræ are bicornate, furnished at the back with two patent aristæ, and splitting at the top; the germen is placed below the receptacle; the style is simple, and longer than the stamina, and the stigma obtuse: the fruit is a globose, umbilicated berry, containing four cells; the seeds are small.

This genus comprehends the *Vaccinium* and *Oxycoccus* of Tournefort.

The number of the stamina, &c. often varies, adding a fourth; the calyx is in some species entire, in others divided into four parts; the corolla in the *Oxycoccus* of Tournefort is, when fully blown, revolute almost to the base.

1. *Vaccinium caule angulato, foliis ovatis serratis, deciduis.*

The angular-stalked *Vaccinium*, with oval, serrated, and deciduous leaves.

Black *Whortleberries.*

The root is very long, woody, and creeping. The stalk is woody, green, angulated, and tough, a foot or more in height, and ramose; the leaves stand thick, and are an inch long, half an inch broad, pointed at the ends, and serrated. The flowers are small, and of a hollowed figure, and pale red colour; they stand on single pedicles. The fruit is a round, umbilicated, bluish-black berry.

It is common with us on heaths. J. Bauhine calls it, *Vitis Idæa angulosa*.

2. *Vaccinium ramis filiformibus, foliis ovatis perennantibus, pedunculis simplicibus, stipula duplici.*

The thin-stalked, oval, perennial-leaved *Vaccinium*, with simple peduncles and a double stipula.

Marsh *Whortle.*

The root is long, very slender, creeping, and of a reddish colour. The stalks are tough and woody, very thin, reddish in colour, and procumbent. The leaves stand alternately; they are very small, oval, and like the leaves of *Serpyllam*. The flowers grow at the tops of the branches, three or four together; each has it's own pedicle, and arises from a kind of durable case; they are small and purple. The berries are large and red, marked with a purple, cruciform umbilicus, often yellow, and spotted with red.

It is found in boggy places. C. Bauhine calls it, *Vitis Idæa palustris*; others, *Orycoccus* and *Vaccinium palustris*.

The other species are, 1. The great *Vaccinium*, or *Vitis Idæa* of the shops. 2. The smaller-fruited, black *Vaccinium*. 3. The red *Vaccinium*. 4. The oblong, whitish-leaved *Vaccinium*. 5. The Ceylon *Vaccinium*, with white berries. 6. The pyrrola-leaved *Vaccinium*. 7. The acute-leaved, marsh *Vaccinium*.

DIOSPYROS.

THE calyx of the flower is a small, permanent perianthium, formed of a single leaf, lightly divided into four segments, and obtuse: the corolla consists of a single petal, of an ovato-campanulated figure, very lightly-divided into four segments, obtuse and small; the stamina are eight short, setaceous filaments: the antheræ are oblong and acuminate; the germen is roundish; the style is single, and longer than the stamina, lightly divided into four segments, and the stigmata obtuse: the fruit is a large, globose berry, containing several cells, and placed on a very large, patent calyx; the seeds are oval and acuminate.

This genus comprehends the *Guaiacana* of Tournefort. There is one species which adds one to the number of all the parts of fructification.

Class the Eighth. Order the Second.

OCTANDRIA DIGYNIA.

Plants which have in every flower eight stamina and two styles.

MOERHINGIA.

THE calyx is a permanent, patent perianthium, composed of four little, lanceolated leaves: the corolla is patent, and composed of four oval, undivided petals, shorter than the cup: the stamina are eight capillary filaments; the antheræ are simple; the germen is globose; the styles are two, erect, and of the length of the stamina; the stigmata are simple; the fruit is a capsule, of a subglobose figure, formed of four valves, containing only one cell; the seeds are numerous, roundish, and convex on one side, and angular on the other.

1. *Moerbingia*

1. *Moerhingia pedunculis unifloris.*
The single-flowered Moerhingia.

**Holly
 Chickweed.**

The root is slender and fibrated; the plant is very small and delicate. The stalks are numerous, round, very slender, and procumbent, three or four inches long, and ramose: the leaves stand two at a joint; they are an inch, or more, in length, as thin as a fine thread, and of a bright green colour. The flowers stand singly on the pedicles, and are small and white, the capsules brownish.

It is common on the Alps and Apennines. C. Bauhine calls it, *Alysine tenuifolia muscosa*; others, *Alysine muscosa*.

2. *Moerhingia scapis bifloris.*
The biflorous Moerhingia.

The root is perennial and small; the stalks numerous, and very thick set with leaves toward the base; the leaves very narrow, and about half an inch long: the stalks which support the flowers rise from these; they are half an inch long, and have about their middle a pair of very minute leaves; from the axis of these grow pedicles for the flowers, which are small and white, always two upon the stalk.

Linnaeus first discovered this in Lapland; he there calls it, *Sagina ramis erectis bifloris*; but, when he called it thus, he had not examined its characters.

CHRYSO SPLENIUM.

THE calyx is a coloured, permanent perianthium, patent, and divided into four oval segments, two of the opposite ones smaller than the others; there is no corolla: the stamina are eight very short, erect, subulated filaments, placed in a quadrangular receptacle: the antheræ are simple; the germen is immersed in the receptacle, and terminates in two styles, of a subulated figure, and of the length of the stamina: the stigmata are obtuse: the fruit is a capsule, divided into two parts, and armed with two prominences, or beaks, surrounded by the green cup, and formed of two valves, but contains only one cell: the seeds are numerous, and very small.

1. *Chrysosplenium foliis alternis.* **The greater golden**
The alternate-leaved Chrysosplenium. **Saxifrage.**

The root is small and creeping; the stalk is very tender, green, round, and a little hairy, square, and in part procumbent, and five or six inches in length: the leaves are roundish, somewhat cordated at the base, and crenated deeply about the edges, of a pale green colour, and a little hairy; they stand alternately, and have pedicles an inch or two in length. The flowers are very small, and of a bright yellow, or gold colour.

It is common on bogs. Ray calls it, *Saxifraga aurea foliis pediculis oblongis insidentibus*.

2. *Chrysosplenium foliis oppositis.* **The lesser golden**
The opposite-leaved Chrysosplenium. **Saxifrage.**

The root is creeping and small; the stalks are square, hairy, in part procumbent, and about four inches long: those which produce flowers are usually shorter, but more erect than the rest. The leaves are small, roundish, and crenated at the edges; they stand in pairs, on very short pedicles. The flowers are very small, and yellow; they stand on very short pedicles, in the divarications of the branches.

It is common in boggy places. C. Bauhine calls it, *Saxifraga rotundifolia aurea*.

GALÉNIA.

THE calyx is a very small, hollow perianthium, divided into four oblong segments: there is no corolla: the stamina are eight capillary filaments, nearly of the length of the cup: the antheræ are didymous; the germen is roundish; the styles are

are two, simple and reflex: the stigmata are simple; the fruit is a roundish capsule, having two cells; the seeds are two, oblong and angulated.

These characters sufficiently distinguish the *Galena*, without a farther description.

Class the Eighth. Order the Third.

OCTANDRIA TRIGYNIA.

Plants which have in every flower eight stamina and three styles.

POLYGONUM.

THERE is no calyx, but the corolla has by some been called a calyx, and has a singular kind of green, thick substance, growing to it's outer part, much resembling one: the corolla consists of a single petal, narrow at the base, and imperforated: the limb is open, and divided into five oval, obtuse, permanent segments: the stamina are eight very short, subulated filaments: the antheræ are roundish and incumbent; the germen is triquetrous; the styles are three, very short, and filiform; the stigmata are simple: there is no pericarpium, but the corolla remains, and surrounds the seed, which is single, triquetrous, and acute.

Linnaeus has of late been willing to include the *Bistorta*, *Helxine*, and *Persicaria*, all under this common genus; they are, indeed, all nearly allied, but it appears much more eligible to keep them separate, as there are evident characters, though but small ones, to support the distinction.

POLYGONUM.

Knot-grass.

There is scarce any known plant which varies so extremely from it's usual appearance as the *Polygonum*, under the accidents of more or less nourishment, and other such variations of circumstances; it has been, from this, described under the names of several different species by authors, but it is in reality one and the same plant under them all. It's root is fibrous and white; the stalks are numerous, round, jointed, and tough; the leaves stand alternately, and are naturally of a figure approaching to oval, but lanceolated at the end; they are, however, sometimes broader and roundish, sometimes oblong, sometimes very narrow, and sometimes remarkably short. These varieties have given occasion to four imaginary species, under the names of; 1. *Polygonum lato subrotundo folio*. 2. *Polygonum angustis foliis*. 3. *Polygonum brevi angustoque folio*; and, 4. *Polygonum angusto oblongo folio*: any of these will, however, by culture, be reduced to the primitive appearance, and all will appear alike; the flowers in all are small; they stand in the axæ of the leaves, without pedicles, and are of a pale reddish colour.

It is very common in all our uncultivated places.

PERSICARIA.

THERE is no calyx, unless, as some have done, we call the corolla by that name: the corolla is permanent, and is divided into five oval, obtuse, hollow, erect, and alternately connivent segments: the stamina are often only five filaments, of a subulated figure: the antheræ are simple; the germen is roundish; the style is bifid, and the stigmata are obtuse; there is no pericarpium, but the corolla remains, and surrounds and incloses the seed, which is single, of an oval figure, and compressed.

There is great irregularity in this genus, both in regard to it's class, and to itself, in the several species. The number both of the stamina and styles is uncertain: the stamina are in some five, and longer than the corolla, with a single style; in others they are six, shorter than the corolla, and the style double; in others they are eight; and, in some, the corolla is divided only into four segments, the lower one reflex. If to this it be added that several of the species vary extremely in their manner of growing, and have thence been described each under the names of several different species, it will appear that no genus of plants, either from nature or art, has been so much subject to error and confusion.

1. *Perficaria floribus hexandris digynis.* **Spotted**
The Perficaria, with flowers with six stamina and two styles. **Arfmarc.**

The root is fibrous; the stalks are numerous, thick, round, succulent, jointed, and two feet high: the leaves stand singly at the joints; they are three inches long, an inch, or more, in breadth, and pointed at the end: the flowers stand in clusters, or short spikes, on the extremities of the branches; they are small and reddish: the leaves are usually spotted in the middle, with a large black spot; sometimes they want this; and in some plants it is roundish, in others in form of a crescent; the flowers are also sometimes white. These and other as trivial and accidental variations have been described as distinct species by many authors. The plant, in it's common state, is called by C. Bauhine and others, *Perficaria mitis* and *Maculosa*.

It is common every-where with us about ditches, and on dunghills.

2. *Perficaria floribus hexandris semidigynis.* **Sharp**
The Perficaria, with hexandrous, semidigynous flowers. **Arfmarc.**

The root is oblong, slender, white, tough, and fibrated: the stalks are numerous, round, slender, green, and a foot and half high: the leaves stand alternately; they are three inches long, near an inch broad, pointed at the ends, and of a pale green: the flowers stand in long slender spikes, at the extremities of the branches. The whole plant is of an acrid taste, the other is mild.

This is common with us about waters, and in various places puts on very different forms, appearing larger or smaller, erect or procumbent, &c. in these it has been described under the names of many different species. In it's common state, C. Bauhine calls it, *Perficaria urens*, five *Hydropiper*.

Of the other more certainly distinct species are, 1. The willow-leaved *Perficaria*. 2. The perennial, shrubby *Perficaria*. 3. The narrow-leaved, shrubby *Perficaria*. 4. The *Perficaria*, with leaves woolly underneath. 5. The procumbent, long-spiked *Perficaria*.

BISTORTA.

THERE is no calyx; the corolla consists of a single petal, narrow and imperforated at the base: the limb is erect, and divided into five oval, and alternately connivent segments: the stamina are eight subulated filaments, longer than the corolla; the anthers are roundish, small, and incumbent: the germen is triquetrous; the styles are three, very short and filiform, and the stigmata are simple: the flower remains, and supplies the place of a pericarpium, surrounding the seed, which is single, triquetrous, and acute,

1. *Bistorta foliis ovato-oblongis acuminatis.* **Wistort.**
The Bistort, with ovato-oblong, acuminate leaves.

The root is thick, oblique, and variously contorted, blackish on the surface, and reddish within: the leaves are three inches long, and near two in breadth; they stand on long pedicles, edged with narrow, foliaceous appendages, and are of a deep green on the upper side, and whitish underneath: the stalk is round, slender, jointed, and two feet high: the leaves stand alternately on it, and at it's top is a spike of flowers, short, thick, and very beautiful: the flowers are small, and of a beautiful red.

It is a native of England, but not common; some meadows near Lambeth abound with it. C. Bauhine calls it, *Bistorta radice minus intorta*; others, *Bistorta major*. It's root is a good astringent, and is much used in the shops.

2. *Bistorta foliis lanceolatis* **Small**
The lanceolated-leaved Bistort. **Bistort.**

The root is oblong, thick, oblique, and variously contorted, black on the surface, and white within: the radical leaves are broad and short; those on the stalks are three
 or

or four inches long, not half an inch broad, and of a lanceolated figure: the stalk is slender, round, jointed, and six inches high; the leaves stand alternately on it; at the top stands a thin spike of whitish flowers.

It is found in the North of England. C. Bauhine calls it, *Bistorta Alpina media*; J. Bauhine, *Bistorta minima*; and others, *Bistorta sobolifera*.

HELXINE.

THERE is no calyx: the corolla is permanent; it consists of a single petal, divided into five obtuse, erecto-patent segments: the nectarium consists of eight oval, coloured, very short granules: the stamina are eight fabulated filaments, of the length of the corolla: the anthers are roundish and incumbent: the germen is triquetrous; the styles are three, simple, and of the length of the stamina: the stigmae are capitated; the corolla remains and performs the office of a perianthium, surrounding the seed, which is single, triquetrous, and acute.

This genus comprehends the *Tragopyrum* of authors, and some of the *Perficariae* of the same.

1. *Helxine caule erecto inermi, foliis cordato-sagittatis.*

The erect Helxine, with cordato-sagittated leaves.

**Black
Wheat.**

The root is oblong, creeping, and fibrated: the stalk is single, round, smooth, solid, ramose, and two or three feet high: the leaves stand on long pedicles near the bottom of the stalk; higher up they have scarce any; they are two inches and a half long, an inch and half broad, and of a deep green, cordated at the base, and pointed at the extremity: the flowers stand in a kind of lax spikes, on pedicles, an inch, or two, in length; they are small, and of a purplish white.

It is a native of Germany. Dodonæus calls it, *Tragopyrum*; Tournefort, *Tragopyrum vulgare erectum*; and C. Bauhine, *Erysimum vulgare folio hederaceo*. We cultivate it in fields for the seeds, which are good food for many animals.

2. *Helxine caule volubili.*

The voluble-stalked Helxine.

**Black
Bindweed.**

The root is slender, yellowish, and tough; the stalks are round, weak, ramose, and two feet long, but they support themselves, by twisting about every thing they come near: the leaves stand singly, at considerable distances; they are an inch and half long, near an inch broad, and of a yellowish-green: the flowers are small and whitish; they stand in loose spikes, or oblong clusters.

It is common in our corn-fields. Tournefort calls it, *Tragopyrum vulgare scandens*; J. Bauhine, *Helxine semine triangulo*; C. Bauhine, *Convolvulus minor semine triangulo*.

3. *Helxine foliis ovatis, caule rastro inermi.*

The oval-leaved, erect Helxine.

**Oriental
Arifmart.**

This is an extremely beautiful plant, and has so much of the external appearance of the perficariae, that it is not wonderful that it has been generally ranked among them. Its root is fibrous and white; its stalk round, jointed, and six or seven feet high: its leaves are ten inches long, and five broad, pointed at their ends, and of a deep green; the flowers are large, and of a beautiful bright purple; they stand in large, long spikes at the extremities of the branches.

It is a native of the East; but we have it frequently in our gardens. Tournefort calls it, *Perficaria orientalis nicotianæ folio, calycibus purpureis*.

The other species of *Helxine* are, 1. The rough-fruited *Helxine*. 2. The Asiatic, cereal *Helxine*. 3. The ramose, lanceolate-leaved *Helxine*, called long-leaved, racemous *Arifmart*; and, 4. The shrubby *Helxine*, called the shrubby mountain Dock.

PAULLINIA.

THE calyx is a permanent perianthium, composed of four oval, patent leaves; the corolla consists of four oblong petals, of an obversely oval figure, patent, and twice as large as the cup: the stamina are eight short, simple filaments; the antheræ are small; the germen is turbinate, triquetrous, and obtuse; the styles are three, short and filiform: the stigmata are simple and patent: the fruit is a large triquetrous capsule, formed of three valves, and containing three cells: the seeds are single, and of an oval figure.

This genus comprehends the *Seriana* and the *Cururu* of Plumier; in the *Seriana*, the capsule carries the seed at the base; in the *Cururu*, at the apex. They are Americans, described by Plumier.

CARDIOSPERMUM.

THE calyx is a permanent perianthium, composed of four obtuse, hollow leaves, alternately larger; the corolla consists of four petals, obtuse, but terminated by a kind of point; they stand alternately with the larger leaves of the cup: the nectarium is very small, and surrounds the germen; it is composed of four leaves, narrow at the ungues, obtuse, and pointed at the extremities; two of them form an erect lip; the stamina are eight subulated filaments, scarce longer than the cup; three of them stand opposite to three others, and the remaining two on the side: the antheræ are small; the germen is triquetrous; the styles are three, and short; the stigmata are simple; the fruit is a roundish, trilobated, and inflated capsule; it contains three cells, and opens at the extremity: the seeds are single, globose, and marked with a heart at the base. This genus comprehends the *Coriodum* and *Vesicaria* of authors.

There is only one known species of it.

CARDIOSPERMUM.

The root is large, thick, and fibrated; the stalks are weak, slender, striated, and support themselves by means of any thing solid in their way; they grow to three feet long: the leaves are divided into sometimes three, sometimes five lobes; these are oblong and serrated; the flowers are large and white: the fruit is inflated like the bladder of the winter cherry, and as large as a walnut: the seeds are large and black, the cordated spot white.

It is a native both of the East and West Indies: C. Bauhine calls it, *Pisum vesicarium fructu nigro alba macula notato*.

SAPINDUS.

THE calyx is a patent perianthium, composed of four plane, oval, coloured, deciduous leaves: the corolla is smaller than the calyx, and consists of four oval petals: the stamina are filiform; the germen is triangular; the styles are three, and short; the stigmata are simple: the fruit consists of three globose, inflated capsules, adhering together: the seed is a round nut. The three capsules, however, seldom all come to perfection; two of them are usually abortive.

Class the Eighth. Order the Fourth.

OCTANDRIA TETRAGYNIA.

Plants which have in every flower eight stamina and only four styles.

P A R I S.

THE calyx is a permanent perianthium, composed of four patent, acute, lanceolated leaves, of the bigness of the flower: the corolla consists of four oblong, plane, patent petals: the stamina are eight subulated filaments; the antheræ are long and erect: the germen is round and marked with four faint angles: the styles are four, patent and shorter than the stamina; the stigmata are simple: the fruit is a berry of a globose, tetragonal form, containing four cells, and standing in the cup: the seeds are numerous, and arranged in a double series.

This genus comprehends the *Herba Paris* of authors.

1. *Paris foliis quaternis.*

The four-leaved Paris.

**Herb Truc-
lobe.**

The root is oblong, slender, jointed, and creeping. The stalk is round, firm, and six or eight inches high. Near it's top there stand four leaves, sometimes five, very rarely more; these are three inches long, an inch broad, and of a lanceolated figure, rough to the touch, and not indented about the edges: the flower is large and white; the berry black, when ripe.

It is found in many of our woods. C. Bauhine calls it, *Solanum quadrifolium bacciferum*; others in general, *Herba Paris*.

2. *Paris foliis ternis.*

The three-leaved Paris.

**The lesser Herb
Truclobe.**

The number of leaves on the stalk in this plant would not be enough to characterise a different species from the former; but there are, beside these, sufficiently certain and obvious distinctions: the root is small, creeping, and reddish; the stalk very slender and weak; the leaves are never more than three; they are about three inches long, and three quarters of an inch in breadth, of a pale green, and even at the edges: the flower is small and white, and it's petals of an oval figure, and larger than the leaves of the cup: the stamina also are only six in number; and the petals of the flower, and all the other parts, a fourth less in number than in the other; so that it almost runs away from the very genus. Authors in general, fond enough of making species out of varieties, have ranked this species as a variety.

A D O X A.

THE calyx is a perianthium, plane, divided into two parts, permanent, and placed below the germen: the corolla is plane, and composed of a single petal, divided into four oval, acute segments, larger than the cup: the stamina are eight subulated filaments, of the length of the cup: the antheræ are roundish; the germen is simple; the styles are four, simple, erect, permanent, and of the length of the stamina; the stigmata are simple: the fruit is a globose berry, situated between the calyx and corolla; the calyx adheres to it's under part: the berry is umbilicated, and contains four cells: the seeds are single and compressed. This is the fructification of the terminatory flower; the lateral ones all add a fifth to the number of the parts.

Of this genus there is only one species.

A D O X A. Tuberous Moschatel.

The root is thick, white, and jointed; the leaves are composed of a number of oblong segments, arranged into a kind of tripartite order, on a long pedicle: the stalk rises to about the height of the leaves, that is, to two or three inches; it is very slender and delicate, of a pale green, and smooth; about it's middle stand two leaves opposite to one another, like the radical ones, but smaller, and placed on short pedicels: at the top stands a kind of square head, small, of a yellowish-green, and composed of five little flowers.

It is common in our woods. C. Bauhine calls it, *Ranunculus nemorum Moschatellina dictus*; others, *Moschatellina foliis fumaris bulbosa*.

E L A T I N E.

THE calyx is a perianthium, composed of four roundish, plane, permanent leaves, of the height of the flower: the corolla consists of four sessile, oval, obtuse, patent petals: the stamina are eight filaments, of the length of the corolla; the antheræ are simple: the germen is large, orbiculated, and somewhat compressed: the styles are four, erect, parallel, and of the length of the stamina; the stigmata are simple: the capsule is large, orbiculated, of a globose figure, but depressed; it is formed of four valves, and contains four cells: the seeds are numerous, lunated, erect, and surround the receptacle in a rotatory manner.

This genus comprehends the *Potamogethys* of Buxbaum, and the *Alismastrum* of Vaillant.

*Elatine foliis oppositis.**The opposite-leaved Elatine.*

The root is a cluster of white, long, and moderately thick fibres: the stalks are numerous, round, smooth, weak, and six inches long; the leaves are of an oval figure, a quarter of an inch, or more, in length, and nearly as much in breadth: the flowers are small and white.

This is a native of moist parts of Europe; it grows in watery places. Vaillant calls it, *Alismastrum serpyllifolium flore albo tetrapetalo*.

Class the Eighth. Order the Fifth.

OCTANDRIA POLYGYNIA.

Plants which have in every flower eight stamina and a great number of styles.

Of this order there is only one known genus.

M I C H E L I A.

THE calyx is a deciduous perianthium, composed of eight obtuse, lanceolated leaves: the corolla is smaller than the calyx, and consists of eight lanceolated, acute petals; the stamina are eight subulated filaments, shorter than the corolla; the antheræ are acute: the germina are numerous, and formed into a kind of spike; there are no styles; the stigmata are reflex; the fruit consists of a number of globose berries, equal to that of the germina, and arranged into a cluster. These berries contain each a single cell only, and in this are four seeds, convex on one side, and angular on the other. It is an oriental, described in the Hort Malab. 1. 19.

Class the Ninth.

ENNEANDRIA.

Plants which have in every flower nine stamina.

OF this class there are only four genera; one of these is of the monogynous kind, having only a single style; two are of the trigynous, and the remaining one hexagynous.

Class the Ninth. Order the First.

ENNEANDRIA MONOGYNIA.

Plants which have nine stamina and only one style in the flower.

LAURUS.

THERE is no calyx: the corolla much resembles a calyx, and has been mistaken for one; it consists of six erect, hollow, ovato-acuminated petals, alternately exterior. The nectarium is composed of three coloured, acuminated tubercles, terminating each in two hairs, and standing round the germen: the stamina are nine filaments, shorter than the corolla, compressed, obtuse, and placed in three's: the anthers adhere to the edge of the upper part of the filaments on each side, and there are two globose corpuscles affixed by a very short filament to each of the stamina of the inner series, near the base: the germen is oval; the style is simple, equal, and of the length of the stamina: the stigma is obtuse and oblique: the fruit is a drupe of an oval, acuminate figure, containing only one cell, and contained in the corolla: the seed is a single, ovato-acuminated nut; it's kernel of the same figure.

This genus comprehends the *Laurus* of Tournefort; and the *Cinnamomum*, *Camphora*, *Persea*, *Borbonia*, *Benzoe*, and *Sassafras* of others.

The greater number of the species of this genus, the cinnamon-tree, camphire-tree, &c. are of the hermaphrodite kind; but some, as the common bay, have the male flowers on separate trees: in this case the stamina vary in number from eight to fourteen, and the corolla is naked, and divided into four parts. The little bodies, adhering to some of the filaments, are the great characteristics of the genus.

1. *Laurus foliis lanceolatis venosis perennantibus, corollis quadrifidis.*

The Laurus, with lanceolated, perennial leaves, and quadrifid corollas.

The Bay-tree.

The root is strong, woody, and divaricated; the shrub usually ten or twelve feet high; sometimes, however, it rises with a single trunk to the bigness of a tree. The leaves are hard, rigid, of a deep green, three inches long, and two broad; they stand thick and close: the flowers are small, and of a whitish yellow: the berries large, oblong, and black, when ripe.

It is a native of Italy; we have it in our gardens, almost every-where; it's berries are an excellent carminative, and much used in medicine.

2. *Laurus foliis oblongo-ovatis trinerviis, nitidis, planis.* **The Cinnamon-tree.**
The oblongo-ovate, trinervous, plane-leaved Laurus.

The root is large and brachiated; the bark of it greyish without, reddish within, and smells strongly of camphire: the trunk is large, and the tree grows to a great height, and is very ramose: the leaves stand irregularly; they are of an oval figure, four inches long, thick, of a bright green, and supported on pedicles of half an inch long, thick and furrowed: the flowers are small and white; they stand in clusters on the extremities of the branches, and are of a very fragrant smell.

It

It is a native of Ceylon, where it is as common as any tree we have here. Its second, or under bark, is the Cinnamon of such use as an astringent, &c.

3. *Laurus foliis ovatis, utrinque acuminatis, trinerviis, nitidis, petiolis laxis.*

The Camphire-tree.

The Laurus, with oval, glossy leaves, on lax pedicles.

The root is large, thick, and brachiated; the trunk often three feet in diameter, the height of the tree that of our highest elms; it is very ramose, its bark greyish, and rough on the trunk, but green on the young branches. The wood is white, but grows reddish in drying. The leaves stand irregularly, and much resemble those of the common bay-tree; they are more than three inches long, an inch and a half broad, somewhat curled about the edges, and terminate in a very long and narrow point; they are of a bright green on the upper surface, and of a greyish green underneath, and stand on pedicles of an inch long, somewhat hollowed. The flowers are very small, and white; they stand in clusters, on the tops of ramose pedicles, rising from the axils of the leaves: the fruit is a black shining berry.

It is a native of many parts of the East. Breynius calls it, *Arbor Camphorifera Japonica foliis laurinis, fructu parvo globoso, calyce brevissimo.*

The Camphire of the shops is prepared from the wood of this tree by a coarse kind of sublimation; all the parts of the tree smell strongly of it.

4. *Laurus foliis enerviis, obverse ovatis, utrinque acutis, integris, annuis.*

The Benjamin-tree.

The Laurus, with deciduous leaves, without ribs, of an obversely oval figure.

The root is brachiated; the trunk two feet, or more, in diameter; the whole tree very tall, and ramose. The leaves are four inches long, and two and a half broad, largest at the further end, and of a pale green colour on the upper side, and whitish underneath. The flowers are very small, and yellow; they stand in little clusters: the fruit is large.

It is a native of the East and West Indies. Many of the late writers have called it, *Arbor limonii folio benzoinum fundens.*

5. *Laurus foliis integris et trilobis.*

The Sassafras-tree.

The Laurus, with undivided and trilobate leaves.

The root is brachiated, very long, and spreading, but not penetrating deep into the ground. The trunk is single, moderately thick, but not very high; the top ramose and spreading. The leaves stand irregularly on the branches, and are green all the year; the young ones are of an oval figure, undivided, and obtusely pointed at the extremity; the others are divided into three lobes each, and resemble, in some degree, those of the fig; they are of a dusky green on the upper side, and whitish underneath. The flowers stand in clusters, on long pedicles; they are small, and are succeeded by berries, of the shape and size of those of the bay.

It is a native of America; we have it in our gardens. C. Bauhine calls it, *Sassafras arbor ficulneo folio.*

The bark is an excellent diaphoretic and attenuant, and is in great esteem, as is also the wood.





8

Michelia



9

Butomus



Tropaeolum



Cardiophorum



Saururus



Barbarea



Agrostis



Panicum



Andropogon



Achene

Class the Ninth. Order the Second.

ENNEANDRIA TRIGYNIA.

Plants which have in each flower nine stamina and three styles.

SPONDIAS.

THE calyx is a permanent perianthium, formed of a single leaf, divided into five segments at the edge: the corolla consists of five oval, plane, patent petals: the stamina are nine filaments; five of them stand in a circular order, the rest are equal in length to them and to the cup: the antheræ are simple; the germen is oval; there is scarce any style; the stigmata are three, obtuse, and permanent: the fruit is a berry, of an oval figure; the seeds are four in every cell of the berry.

It is an American, described by Plumier under the name of Mombin.

RHEUM.

THERE is no calyx; there are, indeed, a few partial, vague spathe, but they are not to be called by that name: the corolla consists of a single petal, which is narrow at the base, and impervious: the limb is divided into six obtuse segments, alternately smaller: the stamina are nine capillary filaments, inserted into the corolla, and of the same length with it: the antheræ are didymous, oblong, and obtuse: the germen is short and triquetrous; the styles are scarce visible; the stigmata are reflex and plumose; there is no pericarpium: the seed is single, large, triquetrous, acute, and surrounded with membranaceous rims.

This genus approaches nearly to the docks, or rumices, in many respects, but is extremely different in others.

Of this genus there is only one known species.

RHEUM. The Rhapontic Plant.

The root is large and brachiated; the radical leaves are of a roundish figure, a foot in diameter, of a strong green colour, marked with large longitudinal ribs, and placed on long pedicles. The stalk is large, thick, striated, hollow, and two feet high; the leaves stand alternately on it, at considerable distances, and are large and roundish, but somewhat pointed. The flowers are small and white, and are placed in vast clusters together.

It is a native of Thrace and Scythia; we have it in some gardens. Prosper Alpinus calls it, Rhaponticum; Morison and others have made it a species of Dock, but erroneously: Tournefort first declared it to be a distinct genus, and Linnæus has followed him.

It's root is the Rhapontic of the shops, the true Rha, or Rheum, of Dioscorides, and the rest of the antients, for they were not acquainted with our rhubarb. This root purges more gently than rhubarb, but is a more powerful astringent: it ought to be more known in the shops than it is at present.

Class the Ninth. Order the Third.

ENNEANDRIA HEXAGYNIA.

Plants which have in every flower nine stamina and six styles.

Of these there is only one known genus.

BUTOMUS.

THE calyx is a common involucre, short, and composed of three leaves: the umbel is simple: the corolla consists of six roundish, hollow, fading petals, alternately exterior, smaller, and more acute: the stamina are nine subulated filaments; six of them are placed exteriorly: the anthers are bilamellated: the germina are six, oblong and acuminate: the styles are as many: the stigmata are simple: the fruit consists of six oblong and gradually attenuated capsules, erect, formed each of a single valve, and opening inwards: the seeds are numerous, of an oblong, cylindric form, and obtuse at both ends.

Of this genus there is only one known species.

BUTOMUS. The flowering Rush.

The root is oblong, thick, and divided, part penetrating into the mud, part creeping upon, or but just under, the surface of it. The radical leaves are numerous, a foot long, of a triangular figure, and dusky green colour. The stalk is round, thick, naked, and two feet high; at its top stand ten or fifteen large, beautiful, reddish-white flowers, in a kind of umbel.

It is common with us about waters. C. Bauhine calls it, *Juncus floridus major*; others, *Juncus floridus*.

Class the Tenth.

DECANDRIA.

Plants which have in each flower ten stamina.

OF the Decandria some have only one style, some two, some three, some five, and some ten. The genera of this class are, therefore, to be arranged into five orders, under the names of Monogynia, Digynia, &c.

Class the Tenth. Order the First.

DECANDRIA MONOGYNIA.

Plants which have in every flower ten stamina and only one style.

THE genera comprised within the limits of this order are very numerous, but there is an obvious distinction among them, some having the stamina declinated, others erect; according to this, therefore, they may be conveniently arranged into two divisions.

Class

Class the Tenth. Order the First.

Division the First.

Decandria Monogynia, with declined stamina.

SOPHORA.

THE calyx is a short perianthium, formed of a single leaf, and of a campanulate figure; it's base is gibbous upwards; it's rim is divided into five segments, oblique and obtuse: the corolla is of the papilionaceous kind, and composed of five petals: the vexillum is oblong, gradually broader, strait, and it's edges reflex: the alæ are two, oblong, of the length of the vexillum, and appendiculated at the base: the carina is formed of two petals, like the alæ, with their lower edges approximated, and is of a navicular figure: the stamina are ten distinct, parallel, subulated filaments, of the length of the corolla, and buried in the carina: the antheræ are very small, and assurgent: the germen is oblong and cylindric: the style is of the size and situation of the stamina: the stigma is obtuse: the fruit is a very long, slender legumen, having only one cell, and nodose at the seeds; these are numerous and roundish.

There is but one known species of this genus. Dillenius makes it a species of Ervum. It agrees with diadelphous papilionaceous plants in all things, but that the stamina are distinct. These characters sufficiently distinguish it, without a further description.

CERCIS.

THE calyx is an extremely short perianthium, of a campanulate figure, formed of one leaf, gibbous below, and containing a honey juice; it's rim divided into five segments, erect and obtuse: the corolla consists of five petals, inserted into the calyx, and greatly resembles a papilionaceous flower: the alæ are ten petals, bent upwards, and affixed to long unguis: the vexillum is a single petal, of a roundish figure, unguiculated, and placed under the alæ, which are inferior to it in length: the carina consists of two petals, which converge so as to form a cordated part, including the fructifications, affixed to the unguis: the nectarium is a glandule of a styliform figure, placed under the germen: the stamina are ten distinct, subulated filaments; four of them are longer than the rest, and covered: the antheræ are oblong, incumbent, and assurgent: the germen is of a linear-lanceolate figure, affixed to a long style: the style is of the length and situation of the stamina: the stigma is obtuse and assurgent: the fruit is an oblong, obliquely-acuminated legumen, having only one cell: the seeds are roundish, and annexed to the upper suture.

This genus comprehends the Siliquastrum of authors.

1. *Cercis foliis cordato-orbiculatis glabris.*

The *Cercis*, with smooth, cordato-orbiculated leaves.

Judas-
tree.

The root is brachiated and spreading: the trunk moderately thick; it sometimes grows to the height and stature of a moderate tree, but more usually it has the appearance of a shrub. The branches are few, and purplish: the flowers appear early in spring, four, or more, together, in little clusters; they are moderately large, and of a beautiful purple. The leaves stand alternately; they are smooth, of a roundish figure, and three inches in diameter.

It is a native of Spain, France, and Italy; we have it in gardens. Dodonæus calls it, Arbor Judæ.

2. *Cercis foliis cordatis pubescentibus.*

The *Cercis*, with hoary, cordated leaves.

Canada Ju-
das-tree.

The root is brachiated and very long; the shrub fifteen feet high; sometimes, though rarely, it grows into a tree. The leaves stand alternately; they are roundish, of the size of a crown-piece, soft to the touch, and a little hairy; the flowers are of a pale red colour; the pods very long, and nodose.

It is a native of North America; we have it in some of our gardens. Tournefort calls it, *Siliquastrum Canadense*.

BAUHINIA.

THE calyx is a deciduous perianthium, of an oblong figure, opening longitudinally in it's under part, reclinate on one side, and opening into five parts at the base, the five leaves it is composed of cohering at their upper part: the corolla consists of five lanceolated, undulated petals, their tops attenuated and reflex; the lower ones somewhat the larger, and standing on ungues of the length of the calyx: the stamina are ten filaments, of which the nine superior ones grow together, so as to form a cylindric body, opening below, and shorter than the corolla; the tenth, which stands below all the others, is very long: the antheræ are oval, and are often wanting on the nine conjunct filaments, never in the tenth: the germen is oblong, and stands on a pedicle; the style is filiform and declinate: the stigma is obtuse and assurgent: the fruit is a long, cylindric legumen, having only one cell: the seeds are numerous, round, compressed, and run longitudinally along the pod.

1. *Bauhinia foliis cordato-subrotundis, lobis rotundatis.*

The roundish cordated-leaved Bauhinia, with rounded lobes.

The root is large, brachiated, and spreading. The tree grows to fifteen or twenty feet high, and is very ramose; the trunk is often eight inches in diameter; the leaves are an inch and a half long, and about as much in breadth, of a roundish figure, but cordated at their top, and the lobes that sinuosity divides them into of a roundish figure; they are of a pale green colour, soft to the touch, and of a strong smell, when bruised. The flowers are large, and of a yellowish colour, and striated.

It is a native of both the East and West Indies. Burman calls it, *Bauhinia folio subrotundo, flore flavescente striato*; others, *Mandaru*.

The other species are, 1. The purple-flowered, large-leaved Bauhinia, called St Thomas's-tree. 2. The broader and more deeply sinuated-leaved, purple-flowered Bauhinia. 3. The white-flowered Bauhinia, with large leaves.

PARKINSONIA.

THE calyx is a deciduous perianthium, formed of a single leaf, patent, and divided into five segments: the corolla consists of five petals, nearly equal in size, placed in a circular direction, larger than the cup, and the four upper ones oval, the lower one reniform: the stamina are ten declinated filaments: the antheræ are oblong: the germen is long, cylindric, and declinate: the style is scarce visible; the stigma is obtuse and assurgent: the fruit is a very long, cylindric legumen, nodose at the seeds, and acuminate: the seeds are numerous, and are placed one within every protuberance of the legumen.

Of this genus there is but one known species. It is an American, described by Plumier.

CASSIA.

THE calyx is a deciduous perianthium, composed of five hollow, lax, coloured leaves: the corolla consists of five hollow, roundish petals; the lower ones larger, and more distant than the others: the stamina are ten declinated filaments; the three lower longer than the rest, the three upper shorter: the three lower antheræ are very large, and arcuated, terminating in a beak, and opening at the tops; the four lateral ones open without a beak; the three upper ones are very small, and contain scarce any farina: the germen is cylindric, long, and pedunculated: the style is very short; the stigma is obtuse and assurgent: the fruit is an oblong legumen, divided by transverse septa: the seeds are numerous, roundish, and affixed to the upper edges of the valves.

This genus comprehends the Cassia and Senna of Tournefort, and the *Chamaecrista* of Rivinus. In the Cassia of authors the pod is oblong, and the valves, or septa, entire. In the Senna of authors the pod is gibbous and inflex.

1. *Cassia*

1. *Cassia foliolis quinque parium lanceolatis inferioribus rotundioribus.*

The *Cassia*, with five pairs of lanceolated pinne, the lower ones rounder.

The *Cassia*
Fistula-tree.

This is a large and spreading tree. Its trunk is covered with a greyish outer bark, and, within that, a reddish one. The leaves are pinnated, and very large; the rib on which the pinne stand is fifteen inches, or more, in length; the base somewhat tumid, the colour green; there are usually five or six pairs of the pinne on each rib; they are four or five inches long, two and a half broad, and terminate in a point; their base is rounded; they are thick, and of a deep green colour, and have some general resemblance to the leaves of our walnut-tree. The flowers are large, and of a beautiful yellow colour; they stand on long pedicles, great numbers together, and each has its own pedicle beside, two inches long, and very slender; the pods which succeed these flowers are near two feet long, cylindric, woody, and contain, together with the seeds, a black, sweet, pulpy matter, which is the *Cassia* of the shops, an excellent, mild cathartic.

It is a native of Africa and the East Indies, but it has been long transplanted into America, where it thrives, as if it was native there. Bontius calls it, *Arbor Cassiam solutivam ferens*; Van Rheede, *Canna*.

2. *Cassia pinnis lanceolatis, fructu incurvo compresso.*

The crooked and compressed-fruited *Cassia*, with lanceolated pinne.

The *Sena*
Shrub.

The root is brachiated and spreading. The shrub grows to five or six feet high. The trunk is woody and hard; the branches are long, slender, and tough. The leaves are pinnated, and stand alternately; the rib is about an inch long; the pinne are four, five, or six pairs; there is no odd one at the end; the pinne are of a pale whitish-green, oblong, and of a lanceolated figure. The flowers stand in long series, at the tops of the branches, and are moderately large, and yellow, striped with reddish; the pods are compressed, and crooked.

It is a native of Persia, and is cultivated in Syria and Arabia, whence the dried leaves are sent to Alexandria, and thence distributed throughout the world. Authors call it, *Sena*, *Sena orientalis*, and *Sena foliis acutis*. It is in great use and repute as a purge.

The other species are, 1. The six-leaved *Cassia*, with bicapfular pods. 2. The stinking *Cassia*, with alated pods. 3. The dwarf *Cassia*, with pods like *scenugreek*. 4. The privet-leaved, Virginian *Sena*. 5. The hairy-podded *Cassia*. 6. The many-podded *Cassia*, called occidental *Sena*, and *Chamaecrista pavonis*; and, 7. The little-flowered, Virginian, bastard *Sena*.

POINCIANA.

THE calyx is an oblong, lax, hollow, deciduous perianthium, composed of five leaves, of which the lower one is larger than the rest, and declinate; the corolla is formed of five petals, and is unequal; the four upper petals are roundish, and nearly equal; the fifth is larger, disform, and crenated; the stamina are ten extremely long, declinated, setaceous filaments; the anthers are oblong; the germen is subulate, declinate, and long; it terminates in a style, of the length of the stamina, and the stigma is acuminate; the fruit is an oblong, compressed legumen, with septa; the seeds are single, and are placed lengthwise in the pod.

These characters sufficiently distinguish it, without a farther description.

CÆSALPINIA.

THERE is no calyx: the corolla is of the ringent kind, formed of a single petal: the tube is ventricose and subglobose: the limb is divided into four parts, of which the upper segment is twice as large as the rest, concave, patent, and undi-

vided; the opposite segment to this is erecto-patent, and undivided; the lateral ones are equal, crenated, erect, and equal to the second; the stamina are five very long, crooked, filiform filaments, and bend toward the larger segment: the antheræ are simple; the germen is slender and oblong; the style is simple, and of the length of the stamina; the stigma is capitated: the fruit is an oblong, acuminate legumen, containing one cell: the seeds are numerous and oval. We have the credit of Plumier for these characters, but they are monstrous ones; probably there is some error: the stamina, in the course of nature, ought to be ten; there ought to be a cup, &c.

It is an American, described by Plumier.

GUILANDINA.

THE male flower has a deciduous perianthium, formed of one leaf, and lightly divided into five segments: the tube is cylindric, and marked with ten striæ: the limb hollow; the segments linear: the corolla consists of five lanceolate, hollow, sessile, equal petals, inserted into the mouth of the calyx, their extremities reaching beyond it's verge: the stamina are ten erect, subulated filaments, alternately shorter, inserted into the calyx, and longer than it: the antheræ are obtuse and incumbent: the fruit succeeding the female flower is a legumen of a rhomboidal form, with it's upper suture convex, smooth, ventricose, yet compressed, containing only one cell, divided by transverse valves into many partitions: the seeds are numerous, osseous, of a globose, compressed figure, and are lodged singly between the valves.

Guilandina aculeata foliolis ovalibus cum acumine.

The prickly Guilandina, with oval-pointed leaves.

**The
Bonduc.**

The root is long, spreading, and full of fibres. The shrub grows to six or eight feet high; the young shoots are green, the older branches brownish; the whole shrub is very thick set with thorns. The leaves are pinnated; the pinnæ are small, of a roundish, or oval, figure, but pointed, and a great number of pairs of them stand along the middle rib, at the bottom of which are placed two reddish spines, bending downward. The leaves stand in pairs on the branches, and, from their axils, arise pedicles, on which the flowers stand in spikes; they are moderately large, and yellow. The fruit, when ripe, is bluish.

It is a native of the East and West Indies. Plumier calls it, *Bonduc vulgare minus polyphyllum*.

GUAIAIACUM.

THE calyx is a deciduous perianthium, hollow, composed of one leaf, divided into five ovato-oblong segments: the corolla consists of five petals, hollow, patent, of an ovato-oblong figure, inserted into the calyx, and the upper ones smaller than the others: the stamina are ten erect filaments, inserted into the calyx: the antheræ are small; the style is filiform, strait, and long: the germen is ovato-acuminated; the stigma is slender and simple: the fruit is a roundish, obliquely-acuminated drupe, furrowed on one side; the seeds are oval nuts, covered with pulp.

1. *Guaiacum fructu subrotundo.*

The round-fruited Guaiacum.

**The great
Guaiacum-tree.**

The root is brachiated and long; the tree grows to the height of our ash. It's trunk is often two feet in diameter: the branches are long and knotty; the leaves stand in pairs, and are pinnated; each is composed of four leaves; two at the top, or extremity, of the stalk, two about the middle; they are roundish, an inch and a half long, and an inch broad, firm in their texture, of a pale green colour, and without pedicles. The flowers stand in clusters at the tops of the branches; they are large, and of a beautiful blue colour. The fruit is roundish, hollowed, and red.

It is a native of the American islands. Plumier calls it, *Guaiacum flore caruleo, fructu subrotundo*.

2. *Guaiacum*

2. *Guaiacum fructu tetragono.*
The square-fruited Guaiacum.

The lesser
Guaiacum-tree.

The root is brachiata; the trunk a foot, or more, in diameter, and the tree moderately tall. The leaves are pinnated, but they consist of more pinnæ than those of the former; four or five pairs are frequent on the stalk, or rib, and yet this is seldom more than two inches long; they are small, and pointed at the ends. The flowers stand in clusters, and are large, very beautiful, of a bright blue colour, and fimbriated round the edges. The fruit is yellow, and of a quadrangular figure, somewhat like that of our enonymus.

This is a native of St Domingo, and some other parts of America. Plamier calls it, *Guaiacum flore cæruleo, fructu tetragono.*

The wood of both species is indifferently sent over to us under the name of *Guaiacum*; and, on wounding the trees of either kind, the same acrid resin flows out.

CYNOMETRA.

THE calyx is composed of a single leaf, divided into four parts; two of the segments are longer than the others, and placed opposite: the fruit is a fleshy, lunated legumen, or pod, containing a single seed.

These characters sufficiently distinguish the *Cynometra*, without a farther description.

ANACARDIUM.

THE calyx is a deciduous perianthium, composed of one leaf, divided into five parts, erect and acuminate: the corolla consists of a single petal: the tube is very short; the limb is divided into five lanceolated, reflex segments, longer than the cup: the stamina are two capillary filaments, of the length of the corolla: the antheræ are small; the germen is roundish: the style is subulated, inflex, and of the length of the corolla: the stigma is acute: the receptacle is very large, fleshy, and of a turbinated, oval figure: the seed is a large nut, of a kidney-like shape, placed at the extremity of the receptacle.

This genus comprehends the *Acajou* of Tournefort. There is only one known species of it; the fruit called *Anacardium* in the shops is of another genus.

ANACARDIUM.

The Cashew-nut.

The root is large and brachiata; the tree grows to twenty or thirty feet high, and is very ramose and spreading. The leaves stand very thick on the branches; they are of a kind of oval figure, five inches long, and about three broad; they stand on short pedicles, and are smooth, tough, and of a bright shining green colour on both surfaces. The flowers are small, and grow in a kind of umbels, at the tops of the branches. The fruit is a nut of a kidney-like shape, and about three quarters of an inch long; it stands on the extremity of a fleshy receptacle, of the bigness of a large pear; of a mixed yellow and purple colour, and of a sweetish, but somewhat austere, taste: the nut at the end of this has a double rind, and, in the interstice between, contains a yellow, caustic, oily liquor; within there is a white, edulent kernel.

It is a native of the hotter parts of America. C. Bauhine calls it, *Anacardii altera species*.

DICTAMNUS.

THE calyx is a very small, deciduous perianthium, composed of five leaves, of an oblong, acuminate figure: the corolla consists of five petals, of an ovato-lanceolate figure, acuminate, unguiculated, and unequal; three of them are turned upwards, and two are placed obliquely at the sides: the stamina are ten subulated filaments, of the length of the corolla, placed between the two lateral petals, declinated, and unequal: the antheræ are quadrangular and assurgent: the germen is quadrangular; the style is simple, short, declinated, and crooked: the stigma is acute and assurgent: the fruit is composed of five capsules, growing together by their inner sides; they are compressed,

compressed, acuminate, distant at the tops, and formed of two valves: the seeds are numerous and torbinate.

Of this genus there is only one known species.

DICTAMNUS.

Fraxinella.

The root is perennial, long, and white: the stalk is round, hairy, glutinous to the touch, and often of a purplish colour: the leaves are pinnated and large; they stand alternately on the stalks, and are composed each of three or four pairs of oval, pointed pinnæ, annexed to a middle rib, with an odd leaf at the end. The tops of the stalks are formed into a kind of spikes, of large and very beautiful flowers; they are usually red, sometimes white. The pedicles are hairy, and covered with a soft, resinous matter, very fragrant, and so inflammable, that, if a candle be brought near it, the whole upper part of the plant is on fire in an instant.

It is a native of France and Germany, and is frequent in our gardens. Its root is the radix fraxinellæ of the shops, much recommended as a cephalic. C. Bauhine calls it, Dictamnus albus sive Fraxiella; others only Fraxinella. The Dictamnus Creticus is of another class.

Class the Tenth. Order the Second.

Division the Second.

Decandria Monogynia, with the stamina erect.

TOLUIFERA.

THE calyx is a perianthium of a campanulated figure, composed of a single leaf, divided into five nearly equal segments, one only more remote than the others. The corolla consists of five petals inserted into the receptacle; four of them are equal and linear, and somewhat longer than the cup; the fifth is twice as large as the others, obversely cordated, and its unguis is of the length of the cup: the stamina are ten very short filaments; the antheræ are longer than the calyx: the germen is oblong; there is scarce any visible style; the stigma is acute; the fruit is hitherto unknown.

Of this genus there is only one known species, which is the tree that produces the balsam of Tolu of the shops, and is sufficiently distinguished by these characters, without a farther description.

MONOTROPA.

THERE is no calyx. The corolla consists of ten oblong, deciduous petals, parallello-erect, and serrated at their tops; the alternately exterior ones have gibbose bases, hollowed on their sides, and full of a honey juice: the stamina are ten, erect, subulate filaments; the antheræ are simple; the germen is roundish and acuminate; the style is cylindric, and of the length of the flower; the stigma is obtusely capitated; the fruit is an oval, pentagonal, obtuse capsule, formed of five valves: the seeds are numerous and paleaceous. Such is the state of the terminatory flower, but the lateral ones, if there be any, have a fifth less of all the parts.

This genus comprehends the Orobanchoides of Tournefort, and the Hypopitys of Dillenius.

1. *Monotropa floribus lateralibus octandris, terminatrici decandra.*

The Monotropa, with the lateral flowers, with eight stamina, the terminatory one ten.

The root is extremely long, and moderately thick; the stalk is as thick as a man's finger, when in its full vigour; it is yellow, contorted, and, as it were, like a rope; there are no leaves on it, but only some squamose remainos; at the top stand several flowers, small, and of a whitish yellow; when the plant begins to flower, it is of a pale

pale yellow, afterwards it becomes blackish; it's utmost height is not more than ten inches; it's smell very remarkable, like that of primrose roots, especially when it is past flowering.

It is a native of England, but is scarce; I have only met with it in the West riding of Charlton-forest, Suffex. Plot calls it, *Hypopitys lutea verbasculi odore*; others simply, *Hypopitys*.

2. *Monotropa caule uniflora decandro.*

The Monotropa, with one flower on the stalk, with ten stamina.

The root is oblong and thick; the stalk slender, succulent, and brown; the height of the whole plant six inches; the flower is larger than in the other species, and of a brownish yellow.

It is a native of Virginia, and some other parts of North America.

ZYGOPHYLLUM.

THE calyx is a perianthium, composed of five oval, obtuse, erect, hollow leaves: the corolla is composed of five petals, broadest at the top, obtuse, emarginated, and larger than the cup: the nectarium consists of ten convergent leaves, and includes the germen: the stamina are ten subulated filaments, shorter than the corolla; the antheræ are oblong and incumbent: the germen is oblong, and attenuated at the base: the style is subulated, and of the length of the stamina; the stigma is simple: the fruit is an oval, pentagonal capsule, formed of five valves, containing five cells, with septa adhering to the valves: the seeds are numerous, roundish, and compressed: the figure of the fruit is subject to variation; and there is a species, in which the parts of fructification are a fifth less.

This genus comprehends the *Fabago* of Tournefort.

Zygophyllum capsulis prismatico-pentædriis.

The Zygophyllum, with prismatic, pentædral capsules.

Bean
Capers.

The root is long, thick, perennial, and white; the stalks are numerous, firm, round, smooth, green, jointed, and succulent. At every joint stand two pedicles, thick, an inch long, and membranated: the leaves are roundish, succulent, of a bluish-green, and grow too from the same base; they are two inches and a half long, and two inches broad: the flowers stand on short pedicles, which rise in pairs from the axæ of the leaves; they are moderately large and white.

It is a native of Syria; but we have it in our gardens. *Dodonæus* calls it, *Capparis Fabago*; *C. Bauhine*, *Capparis portulacæ folio*.

ADENANTHERA.

THE calyx is an extremely small perianthium, composed of a single leaf, divided into five segments at the top; the corolla is of a campanulated form, and consists of five petals, sessile, lanceolated, convex inwardly, and concave below: the stamina are ten, erect, subulated filaments, somewhat shorter than the corolla; the antheræ are roundish, incumbent, and have at their exterior extremity a globose glandule: the germen is oblong, and gibbous in it's lower part; the style is subulated, and of the length of the stamina; the stigma is simple; the fruit is a long compressed legumen: the seeds are numerous and roundish.

It is an oriental, described in the Hort. Mal. 6. 14.

HÆMATOXYLON.

THE calyx is a perianthium, composed of a single leaf, divided into five oval, permanent segments: the corolla consists of five oval, equal petals, somewhat larger than the cup: the stamina are ten subulated filaments, somewhat longer than the corolla;

corolla; the anthers are small: the germen is of an ovato-oblong figure; the style is simple, and of the length of the stamina: the stigma is thick and emarginated: the fruit is a capsule of a lanceolate, obtuse figure, composed of two navicular valves, and containing one cell: the seeds are oblong and compressed.

M E L I A.

THE calyx is a very small perianthium, composed of a single leaf, divided into five segments, erect and obtuse: the corolla consists of five long, patent petals, of a linear-lanceolate figure: the nectarium is cylindric, formed of a single leaf, of the length of the corolla, and divided lightly into ten segments: the stamina are ten, very short filaments, inserted into the top of the nectarium; the anthers do not rise above it: the germen is conic; the style is cylindric, and of the length of the nectarium; the stigma is obtuse and emarginated: the fruit is a soft, globose drupe; the seed is a nut, of a roundish figure, marked with five furrows, and contains five cells, with a single, oblong kernel in each.

This genus comprehends the Azederach of Tournefort and others.

1. *Melia foliis pinnatis.* *The pinnated-leaved Melia.*

The Bead- tree.

The root is brachiated; the trunk two feet thick; the bark rough and scabrous; the tree grows to thirty or forty feet high, and is very ramose and spreading: the leaves are pinnated and very large, a foot and half in length, and composed of a great many pairs of pinnae, with an odd leaf at the end. The flowers stand on long pedicles, in considerable clusters; they are small, of a very sweet smell, and of a bluish or purplish colour. The fruit is large, and, when ripe, of a fine yellow colour.

It is a native of Syria; we have it in many gardens. C. Bauhine calls it, Azederach arbor folio fraxini, flore cæruleo. There is only one known species of this genus beside this, which is the ramose-leaved, ever-green, pale-flowered Melia, or Indian Azederach.

R U T A.

THE calyx is a short, permanent perianthium, divided into four parts: the corolla consists of four oval, hollow, patent petals, with very narrow unguis: the stamina are eight subulated, patent filaments, of the length of the corolla: the anthers are erect and short; the germen is gibbous, and marked with a cruciform figure, and with eight points at the base: the style is erect and subulated; the stigma is simple: the fruit is a gibbous capsule, composed of four lobes, and, in some measure, divided from the top into four parts; it contains four cells, and opens four ways at the top: the seeds are numerous, scabrous, of a kidney-like shape, and angular. These are the characters of the lateral flowers: the top flower, in some species, has an addition of a fourth part in all the fructifications.

This genus comprehends the Ruta of authors in general, and the Pseudoruta of Micheli: in the Pseudoruta the petals are plane and entire, and the number of all the parts of fructification quinary.

1. *Ruta foliis decompositis, segmentis latiusculis.* **Common** *The Ruta, with decomposed leaves, with broad segments.* **Rut.**

The root is divaricated, woody, yellow, and fibrated: the stalks are woody, round, covered with a whitish bark, and grow to two or three feet high; the young shoots are green; the leaves are formed of a multitude of roundish segments, placed on ramose pedicles: the flowers stand in clusters at the tops of the stalks, and are beautiful and yellow.

It is a native of France, Italy, and Africa; it is every-where in our gardens. C. Bauhine calls it, Ruta hortensis latifolia.

2. *Ruta foliis decompositis angustioribus, petalis villosis.*

The decompound, narrow-leaved Ruta, with hairy petals.

The root is yellow, woody, long, and divaricated; the trunk an inch in diameter; the leaves very large, but narrow and oblong, and the segments they are composed of are also narrow: the flowers are large, hairy, and of a beautiful bright yellow.

It is a native of Africa, and of some parts of Europe. *Marsson* calls it, *Ruta chilensis angustifolia* *florum petalis villis scabentibus*.

The other species are: 1. The great, stinking, wild Rue. 2. The dwarf Rue, with large and few segments in the leaves. 3. The broad-leaved, hairy-flowered Rue. 4. The white-flowered, prickly Rue. 5. The flax-leaved Rue. 6. The ternate, narrow-leaved, large-flowered Rue, called *Pseudoruta*, by Micheli.

FRAGONIA. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1901. 1902. 1903. 1904. 1905. 1906. 1907. 1908. 1909. 1910. 1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919. 1920. 1921. 1922. 1923. 1924. 1925. 1926. 1927. 1928. 1929. 1930. 1931. 1932. 1933. 1934. 1935. 1936. 1937. 1938. 1939. 1940. 1941. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220. 2221. 2222. 2223. 2224. 2225. 2226. 2227. 2228. 2229. 2230. 2231. 2232. 2233. 2234. 2235. 2236. 2237. 2238. 2239. 2240. 2241. 2242. 2243. 2244. 2245. 2246. 2247. 2248. 2249. 2250. 2251. 2252. 2253. 2254. 2255. 2256. 2257. 2258. 2259. 2260. 2261. 2262. 2263. 2264. 2265. 2266. 2267. 2268. 2269. 2270. 2271. 2272. 2273. 2274. 2275. 2276. 2277. 2278. 2279. 2280. 2281. 2282. 2283. 2284. 2285. 2286. 2287. 2288. 2289. 2290. 2291. 2292. 2293. 2294. 2295. 2296. 2297. 2298. 2299. 2300. 2301. 2302. 2303. 2304. 2305. 2306. 2307. 2308. 2309. 2310. 2311. 2312. 2313. 2314. 2315. 2316. 2317. 2318. 2319. 2320. 2321. 2322. 2323. 2324. 2325. 2326. 2327. 2328. 2329. 2330. 2331. 2332. 2333. 2334. 2335. 2336. 2337. 2338. 2339. 2340. 2341. 2342. 2343. 2344. 2345. 2346. 2347. 2348. 2349. 2350. 2351. 2352. 2353. 2354. 2355. 2356. 2357. 2358. 2359. 2360. 2361. 2362. 2363. 2364. 2365. 2366. 2367. 2368. 2369. 2370. 2371. 2372. 2373. 2374. 2375. 2376. 2377. 2378. 2379. 2380. 2381. 2382. 2383. 2384. 2385. 2386. 2387. 2388. 2389. 2390. 2391. 2392. 2393. 2394. 2395. 2396. 2397. 2398. 2399. 2400. 2401. 2402. 2403. 2404. 2405. 2406. 2407. 2408. 2409. 2410. 2411. 2412. 2413. 2414. 2415. 2416. 2417. 2418. 2419. 2420. 2421. 2422. 2423. 2424. 2425. 2426. 2427. 2428. 2429. 2430. 2431. 2432. 2433. 2434. 2435. 2436. 2437. 2438. 2439. 2440. 2441. 2442. 2443. 2444. 2445. 2446. 2447. 2448. 2449. 2450. 2451. 2452. 2453. 2454. 2455. 2456. 2457. 2458. 2459. 2460. 2461. 2462. 2463. 2464. 2465. 2466. 2467. 2468. 2469. 2470. 2471. 2472. 2473. 2474. 2475. 2476. 2477. 2478. 2479. 2480. 2481. 2482. 2483. 2484. 2485. 2486. 2487. 2488. 2489. 2490. 2491. 2492. 2493. 2494. 2495. 2496. 2497. 2498. 2499. 2500. 2501. 2502. 2503. 2504. 2505. 2506. 2507. 2508. 2509. 2510. 2511. 2512. 2513. 2514. 2515. 2516. 2517. 2518. 2519. 2520. 2521. 2522. 2523. 2524. 2525. 2526. 2527. 2528. 2529. 2530. 2531. 2532. 2533. 2534. 2535. 2536. 2537. 2538. 2539. 2540. 2541. 2542. 2543. 2544. 2545. 2546. 2547. 2548. 2549. 2550. 2551. 2552. 2553. 2554. 2555. 2556. 2557. 2558. 2559. 2560. 2561. 2562. 2563. 2564. 2565. 2566. 2567. 2568. 2569. 2570. 2571. 2572.

THE calyx is a very small, deciduous perianthium, composed of five lanceolate, erect, patulous leaves: the corolla consists of five patent petals, of a cordate form; their ungues long, slender, and inserted into the calyx; the filaments are ten, erect, subulated filaments, longer than the calyx: the anthers are roundish. The germen is pentangular; the style is subulated; the stigma is simple: the fruit is a capsule of a rotundo-acuminated figure; the valves that compose it are ten, which form five lobes, and as many compressed cells; the seeds are single and roundish.

Fragaria foliolis lanceolatis planis lævibus.

The plane, smooth, lanceolated *Fragonia*.

Prickly Cretic
Trefoil.

The root is small, oblong, and divaricated; the stalk is striated, procumbent, and very ramose: the leaves stand three on each pedicle, and two of these pedicles grow together at every divarication of the stalk; each leaf is oblong, smooth, small, and terminates in a spine; and at the bases of the pedicles stand other more rigid spines bending downwards: the flowers stand singly on short pedicles, arising from the divarications of the branches; they are very large, and of a beautiful purple.

It is a native of Italy and France. C. Bauhine calls it, *Trifolium Ipinosum Creticum*, a name most others have borrowed.

TRIBULUS.

THE calyx is a perianthium, divided into five parts, and a little shorter than the corolla; the corolla consists of five oblong, obtuse, patent petals: the stamina are ten very small, subulate filaments; the anthera are simple; the germen is oblong, and of the length of the stamina; there is no style: the stigma is capitated: the fruit is of a roundish figure, and sculeated; it is composed of five capsules, gibbous on one side, and armed with three or four points on the other, angulated and convergent: the seeds are numerous, turbinate, and oblong.

Tribulus foliolis sexparium subæqualibus.

The Tribulus, with six pairs of nearly equal pinnae.

Land Cal-
trops.

The root is very big, slender, white, simple, and fibrous; the stalks are numerous, round, striated, hairy, geniculated and procumbent, usually of a reddish colour, six or eight inches long, and ramose: the leaves stand alternately, except at the top of the stalks, where they are usually opposite; they are composed of about six pairs of oblong pinnae, arranged on a middle rib, and are somewhat hairy: the flowers stand singly on long pedicels, arising from the axils of the leaves; they are large and yellow.

It is a native of France and Italy. Dodonæus calls it, *Tribulus terrestris*; C. Bauhine, *Tribulus terrestris ciceris folio, fructu aculeato*.

J U S S I E A.

THE calyx is a small, permanent perianthium, placed on the germen, and composed of five ovato-acute segments: the corolla consists of four or five roundish patent petals; the stamina are eight or ten filaments, very short and blisform: the antheræ are roundish; the germen is oblong; the style is filiform; the stigma is capitated, plane, and marked with five striæ: the fruit is oblong, thick, coronated, and opens longitudinally: the seeds are numerous, and disposed in series.

Jussiaea, erecta floribus tetrapetalis octandris sessilibus.
The erect *Jussiaea*, with four-leaved, octandrous, sessile flowers.

Catalonian
Jasminine.

The root is oblong, thick, white, divaricated, and fibrated: the stalk is round, erect, thick, and robust, and of the height of a man: the leaves stand alternately; they are smooth, undivided, viscid, oblong, and lanceolated: the flowers are large and yellow; they stand singly at the axæ of the leaves, and divarications of the stalks.

It is a native of America. Seba calls it, *Jasminum Catalanicum*; Plukener, *Lyfimachia foliis parietariae*.

F R A N K E N I A.

THE calyx is an oblong, tubulated perianthium, formed of a single leaf, permanent, and divided into five short segments at the extremity: the corolla consists of five petals, with narrow unguæ, of the length of the cup: the limb is plane; the bractææ round, plane, and patent: the stamina are ten filaments, longer than the tube; the antheræ are simple; the germen is roundish; the style is simple, and of the length of the stamina: the stigma is divided into three parts: the fruit is an oval capsule, covered by the cup. It is formed of three valves, and contains a single cell; the seeds are numerous, oval, and minute.

1. *Frankenia floribus axillaribus solitariis.*
The axillary, solitary-flowered *Frankenia*.

Procumbent
Sea Heath.

The root is small, oblong, tough, and white; the stalk is rigid, uneven, procumbent, and very ramose; it grows to eight inches long: the leaves are very small, oblong, and of a somewhat lanceolated figure; they stand four at a joint, surrounding the stalk, and have no pedicles: the flowers are large, and of a beautiful purple; they stand singly in the axillæ of the branches.

It is found on our sea-coasts. Ray calls it, *Erica lupina maritima Anglica*; C. Bauhine, *Polygonum maritimum minus folio serpylli*.

2. *Frankenia floribus terminatricibus confertis.*
The *Frankenia*, with clustered, terminatory flowers.

Thyine-leaved
Sea Chickweed.

The root is long, woody, and white; the stalks are robust, square, hairy, and six or eight inches long, partly procumbent, partly erect: the leaves stand six or eight at a joint, without pedicles; they are short, and of a lanceolated figure; the flowers are large and white; they stand in clusters ten, or more, together, on the tops of the branches.

It is found on the shores of the Mediterranean. Tournefort calls it, *Alfine Cretica maritima lupina caule hirsuto*.

The other species are, 1. The smooth, broader, glaucous-leaved, white-flowered *Frankenia*. 2. The broader-leaved, hairy, quadrifoliate, smaller-flowered *Frankenia*. 3. The narrow-leaved, pale-flowered *Frankenia*.

C L E T H R A.

C L E T H R A.

THE calyx is a permanent perianthium, composed of five leaves, of an oval figure, hollow and erect: the corolla consists of five oblong, erecto-patent petals, twice the length of the cup, and broadest toward their extremities: the stamina are ten subulated filaments, of the length of the corolla: the antheræ are oblong, erect, and split at the top: the germen is roundish; the style is filiform, erect, permanent, and increasing: the stigma is divided into three parts: the fruit is a roundish capsule, inclosed in a cup; it is formed of three valves, and contains three cells: the seeds are numerous and angular.

It is an American, mentioned by Gronovius, in his Fl. Virg. 47.

P Y R O L A.

THE calyx is a very small, permanent perianthium, divided into five segments: the corolla consists of five roundish, hollow, patent petals: the stamina are ten subulated filaments, shorter than the corolla: the antheræ are large, nutant, and bicornate at top: the germen is roundish, but angulated: the style is filiform, permanent, and longer than the stamina: the stigma is thick: the fruit is a roundish, depressed, pentagonal capsule, containing five cells, and opening at the angles: the seeds are numerous and paleaceous: the stamina and style are in some erect, in others declinated sideways: the figure of the stigma also varies.

1. *Pyrola staminibus adscendentibus, pistillo declinato.*
The *Pyrola*, with ascending stamina, and a declinate pistil.

English Winter-green.

The root is fibrous and white: the radical leaves are six or eight in number; they are of a roundish figure, and deep green colour, and about an inch long, thick, smooth, glossy, and placed on pedicles of three inches long. The stalk is single, simple, erect, and seven or eight inches high; it has a few small, acute leaves on it, and, at the top, stands a kind of short spike of flowers; they are large, white, and very beautiful.

It is a native of the north of England. C. Bauhine calls it, *Pyrola rotundifolia major*; others, *Pyrola vulgaris*.

2. *Pyrola racemis unilateralibus.*
The *Pyrola*, with flowers only on one side.

Tenderer Winter-green.

This is a much more delicate, and less robust, plant than the former. The root is small and creeping. The radical leaves are an inch long, three quarters of an inch broad, thin, soft to the touch, and serrated. The stalk is five or six inches high, very slender, and usually bending. The flowers are smaller than those of the former; they are of a beautiful milk-white colour, and stand in a kind of cluster, on one side only of the stalk. The antheræ are longer than the corolla, and the stigma is prominent beyond them.

It is a native of most parts of Europe, in woods. C. Bauhine calls it, *Pyrola folio macronato serrato*; Clusius, *Pyrola tenerior*.

The other species are, 1. The umbellated, arbutus-flowered *Pyrola*. 2. The round-leaved *Pyrola*, with a single flower. 3. The roundish, but serrated-leaved, *Pyrola*. 4. The shrubby, long-leaved *Pyrola*.

A N D R O M E D A.

THE calyx is a very small, permanent, coloured perianthium, divided into five segments: the corolla is of an inflated, oval, or campanulated figure, formed of a single petal, and divided into five reflex segments at the extremity: the stamina are ten subulated filaments, shorter than the corolla, and scarce affixed to it: the antheræ are bicornate and nutant: the germen is roundish; the style is cylindric, longer than the stamina, and permanent; the stigma is obtuse: the fruit is a roundish, pentagonal capsule,

capsule, composed of five valves, containing five cells, and opening in the angles: the seeds are numerous, smooth, and roundish.

This genus comprehends the *Ledum* of Micheli, the *Chamaedaphne* of Buxbaum, the *Polifolia* of the same author, and the *Chamaerhododendros* of Tournefort. The figure of the corolla varies, but the number of the stamina distinguishes this genus from the *Erica*.

1. *Andromeda foliis alternis lanceolatis margine reflexis.* Willd
The alternate, lanceolate, and reflex-edged leaved Andromeda. Rosemary.

The root is woody, creeping, and fibrated. The stem is woody, low, and ramose. The leaves stand alternately; they are oblong, narrow, lanceolated, and have their edges reflex. The flowers are small and reddish.

It is found on boggy grounds in the North of England. Ray calls it, *Ledum palustre nostras arbuti flore*; C. Bauhine, *Viti Idææ adfinis polifolia montana*.

2. *Andromeda foliis linearibus obtusis sparsis.*
The Andromeda, with linear, obtuse, scattered leaves.

The root is woody, fibrated, and perennial. The stalks are in great part procumbent; they grow to eight or ten inches long, and are brown, scabrous, and ramose. The branches are often erect. The leaves are short, linear, and obtuse; they stand very close and thick. The flowers stand on single pedicels, of an inch long; they are large, of a deep blue colour, and narrow at the mouth.

It is common in the northern parts of Europe, on bogs on the mountains. Rudbeck calls it, *Erica flore purpurascente pendulo, petiolo longo rubro, plicæ folio*; Martin, *Erica rarior*.

The other species are, 1. The very narrow clustered-leaved *Andromeda*. 2. The obtuse, imbricated-leaved *Andromeda*. 3. The blackish-leaved *Andromeda*. 4. The hairy *Andromeda*. 5. The serpyllum-leaved *Andromeda*.

ARBUTUS.

THE calyx is a small, permanent, obtuse perianthium, divided into five parts, and placed under the germen: the corolla consists of a single petal; it is of an oval figure, plane at the base, hollow, and divided at the mouth into five small, obtuse, revolute segments: the stamina are ten filaments, of a subulato-ventricose figure, very slender at the base, and affixed to the edge of the base of the corolla; they are of half the length of the corolla: the antheræ are bifid, and nutant: the germen is of a globose figure, and stands on a receptacle, marked with ten dots: the style is cylindric, and of the length of the corolla: the stigma is thick and acute: the fruit is a roundish berry, with five cells: the seeds are small and oleous.

This genus comprehends the *Arbutus* and the *Uva ursi* of Tournefort, &c. it is nearly allied to the *Vaccinium*.

1. *Arbutus caulibus procumbentibus, foliis integerrimis.*
The procumbent-stalked and undivided-leaved Arbutus.

The root is woody, brown, and perennial. The stalks are numerous, diffuse, and procumbent; they are from a foot to three or four in length, rounded, somewhat unequal, perennial, ramose, and usually reddish. The leaves are of a vertically-oval figure; they stand in pairs, and are smooth, perennial, and have their edges turned in. The flowers stand in clusters on the tops of the branches, eight or ten together; the top of the cluster bends, and every flower has it's own pedicle, and a little squamma at it's base: the calyx is purple, and very small; the flower moderately large, oval, and white.

This is a native of the northern parts of Europe, almost universally. Tournefort, Lobel, &c. call it *Uva ursi*; C. Bauhine, *Vitis Idææ foliis carnosiss et veluti punctatis*; others, *Myrtillus ruber minor*.

The other species are, 1. The black-fruited *Arbutus*, or *Vitis Idæa*, called the Black Whortle. 2. The broader-leaved *Arbutus*; and, 3. The arborecent, long-leaved *Arbutus*, or Strawberry-tree.

LEDUM.

THE calyx is a very small perianthium, formed of one leaf, divided into five segments at the edge: the corolla consists of five oval, hollow, patent petals: the stamina are too patent, filiform filaments, of the length of the corolla: the antheræ are oblong; the germen is roundish; the style is filiform, and of the length of the stamina: the stigma is obtuse: the fruit is a roundish capsule, containing five cells, and opening in five places at the base: the seeds are numerous, oblong, narrow, pointed at each end, and very slender.

Of this genus there is only one known species.

LEDUM.

Marsh Cistus.

The root is creeping, tough, and woody. The stalks are numerous, woody, and firm; they grow to three feet high; they are very ramose, and their bark greyish. The leaves stand very thick; they are three quarters of an inch long, very narrow, and of a brownish-green colour. The flowers are moderately large, and stand on the tops of the branches. The whole plant has a very strong smell, and is glutinous to the touch.

It is frequent in Germany and Sweden. Roppius calls it, *Ledum rorismarini folio*; C. Bauhine, *Cistus ledoo foliis rorismarini, ferrugineis*.

MELASTOMA.

THE calyx is a permanent perianthium, formed of a single leaf, ventricose, and scarce at all divided at the extremity: the corolla consists of five roundish petals, inserted into the margin of the cup: the stamina are ten short filaments, inserted into the cup: the antheræ are long, somewhat crooked, and erect: the germen is roundish, and stands under the cup; the style is emarginated and crooked: the fruit is a roundish berry, included in the cup, and contains five cells; it is coronated with a cylindric margin: the seeds are numerous.

This genus comprehends the *Melastoma* of Burmao, and the *Acinodendron* of the same author.

BARTRAMIA.

THE calyx is a perianthium, divided into five segments: the corolla consists of five cuneiform petals: the stamina are eight oblong filaments: the style is capillary: the fruit is of a globose figure, and has hooked spines all over it.

These characters sufficiently distinguish the *Bartramia*, without a farther description.

SCHINUS.

THE calyx is a very small perianthium, divided into five parts at the edge: the corolla consists of five patent petals: the stamina are ten; the style oblong; the germen roundish: the fruit is a globose berry; the seed is single, globose, and large.

This genus comprehends the *Molle* of Touroefort and others; there is only one known species of it.

SCHINUS.

The root is brachiated, and very large; the tree tall and spreading. The leaves are pinnated; the rib is compressed, and there stand on it four or five pairs of pinnae, oblong, narrow, and very lightly serrated about the edges, principally toward the extremities. The flowers stand in large clusters, on peculiar pedicles; they are very small, and of a yellowish-green colour. The berries are red, when ripe, and much resemble those of the asparagus. The leaves of the young shoots are often laciniated; when rubbed, they have a strong smell of fennel.

It is a native of Peru. C. Bauhine calls it, *Lentiscus Peruviana*; J. Bauhine and others, *Molle*.

Class the Tenth. Order the Second.

DECANDRIA DIGYNIA.

Plants which have in every flower ten stamina and two styles.

DIANTHUS.

THE calyx is a long, cylindric, striated, permanent perianthium; it's mouth is erect, and divided into five segments; it's base is surrounded with four squamulae, two of which stand lower than the rest: the corolla consists of five petals, the unguis of which are of the length of the cup; they are narrow, and inserted into the receptacle: the limb is plane, and the bractæ of the petals broadest at the extremity, and serrated: the stamina are ten fubulated filaments, of the length of the cup, patulous at their tops: the antheræ are of an oval, oblong figure, compressed, and incumbent: the germen is oval; the styles are two, fubulated, and longer than the stamina: the stigmata are bent back and acuminate: the fruit is a cylindric, covered capsule, consisting of one cell, and opening four ways at the top: the seeds are numerous, compressed, and roundish; the receptacle is free, quadrangular, and but of half the length of the fruit.

This genus comprehends the *Caryophyllus* of Tournefort, &c. and the *Tunica* of Dillenius. The styles in some species are but little longer than the stamina; in others they exceed them greatly, but they are, in this case, always revolute a great way.

1. *Dianthus caulibus unifloris, squammis calycinis ovatis, corollis multifidis.*

**Walden
Pink.**

The single-flowered Dianthus, with the squammæ of the cup oval, and the corollæ multifid.

The root is slender, white, and fibrated. The stalks are round, green, slender, and procumbent. The leaves stand very close, in pairs, on these, and are oblong and narrow; from the procumbent stalks rise others, erect, slender, and four or five inches high; on these stand one or two pairs of oblong, narrow leaves, surrounding the stalk at their base, and, at the top of each stalk, stands a single, large, and beautiful flower, of a pale red colour; sometimes there are two, or more, flowers on the stalk, but a single one is most usual.

It is found in barren places with us. Ray calls it, *Caryophyllus minor repens nostras*; C. Bauhine, *Caryophyllus humilis flore unico*. Authors have made several other imaginary species from the different accidents of this.

2. *Dianthus floribus solitariis, squammis calycinis subovatis, corollis crenatis.*

**Clove
Flower.**

The single-flowered Dianthus, with the squammæ of the cup suboval, and the corollæ crenated.

The root is small, white, and fibrated. The stalk is erect, round, jointed, and a foot and a half high. The leaves stand in pairs, and are long, narrow, pungent at the ends, and of a bluish-green colour. The top of the stalk divides into several branches, and on the extremities of these stand the flowers, which are large, and of a fine smell; their colour varies to infinity, but the variations all consist of red and white, in different mixtures and proportions; a deep purplish red is the most common.

It is one of the great ornaments of our gardens. The carnations are all varieties of this species, owing principally to culture. The flowers are used as a cordial.

The other species are, 1. The common, wild Pink. 2. The single-flowered, procumbent, Chinese Dianthus. 3. The lacinated-flowered Dianthus. 4. The common, broad-leaved, wild Dianthus. 5. The barbated, broad-leaved Dianthus, called

Sweet-

Sweetwilliams. 6. The prolificus Dianthus. 7. The narrow-leaved, barbed Dianthus, or Deptford Pink. Tournefort has made about a hundred species, from the varieties of one or other of these.

SAPONARIA.

THE calyx is a permanent perianthium, formed of a single leaf, oblong, and divided into five segments at the edge: the corolla consists of five petals: the ungues are narrow, angulated, and of the length of the cup: the limb is plane; the bractes broadest toward the extremity, and obtuse: the stamina are ten subulated filaments, of the length of the tube of the corolla, alternate, inserted into the ungues of the petals: the antheræ are oblong and incumbent: the germen is cylindric; the styles are two, strait, parallel, and of the length of the stamina; the stigmata are acute: the fruit is a covered capsule, nearly of the length of the cup; there is only one cell in it, and it's figure is cylindric: the seeds are numerous and small; the receptacle is free: the germen and capsule are, in some species, more short and rounded, and the segments of the cup are deeper in some than in others; in some they are almost five-leaved.

1. *Saponaria calycibus monophyllis cylindraceis, foliis ovato-lanceolatis.*

Common

The ovato-lanceolate leaved Saponaria, with cylindric, Soapwort.
monophyllous cups.

The root is slender, jointed, creeping, and reddish on the surface. The stalks are two or three feet high, smooth, round, jointed, and, though thick, not very strong. The leaves stand in pairs; they are two inches and a half long, and an inch and a half broad, smooth, and marked with three large, longitudinal ribs. The flowers stand in a kind of umbels at the tops of the stalks; they are of a pale flesh colour, or else white, and the petals not bifid.

It is common in many parts of England. C. Bauhine calls it, *Saponaria major laevis*; others, *Saponaria vulgaris*.

2. *Saponaria calycibus pentaphyllis, corymbis fastigiatis, foliis linearibus, caule ascendente.*

The linear-leaved, ascendent-stalked Saponaria, with pentaphyllous cups.

The root is oblong, slender, white, and fibrated. The stalks are numerous, jointed, often reddish, and oblique; they grow to four, five, or more, inches in length. The leaves are long, and very narrow: the flowers stand in a kind of umbel at the top, and are usually white.

It is a native of Germany and Sweden. Dillenius makes it a kind of *Spergula*. C. Bauhine calls it, *Caryophyllus saxatilis floribus graminis umbellatis corymbis*.

3. *Saponaria calycibus pentaphyllis corollis, crenato-emarginatis, foliis subulatis.*

The Saponaria, with five-leaved cups, crenato-emarginated corollæ, and subulated leaves.

The root is slender, oblong, white, and woody. The stalks are round, slender, green, and grow to four inches. The leaves are extremely narrow, oblong, and subulated; they stand two at every joint. The flowers stand only toward the tops of the stalks, and are of a pale red colour, streaked with purple.

It is a native of most parts of Enrope. C. Bauhine calls it, *Caryophyllus minimus muralis*; Dillenius, *Spergula foliis knawel flore purpurascente*; others make it a *Lychnis*.

The other species are, 1. The hairy, cupped, diffuse-stalked Saponaria, called the little-flowered, oriental *Lychnis*. 2. The common, perfoliate, red-flowered Saponaria, called red corn *Lychnis*. 3. The grassy-leaved, laxifrage Saponaria. 4. The heath-

leaved, umbellated-flowered Saponaria. 5. The broader-leaved Saponaria; and, 6. The oblong-leaved Saponaria.

SCLERANTHUS.

THE calyx is a tubulated, permanent perianthium, formed of one leaf, and divided into five segments: there is no corolla: the stamina are ten very small, erect, tubulated filaments, inserted into the calyx: the antheræ are roundish; the germen is roundish; the styles are two, erect and capillary, and of the length of the stamina; the stigmata are simple: the fruit is an oval capsule, contained in the base of the cup, which is shut up at the neck: the seeds are two, convex on one side, and plane on the other.

This genus contains the Knawel of Dillenius; Vaillant confounds it with the Alchimilla.

1. *Scleranthus calycibus fructus clausis.* **Hoary, perennial Knawel.**
The Scleranthus, with the calyces of the fruit shut.

The root is oblong and tough. The stalks are numerous and procumbent, round, slender, jointed, and, toward the tops, ramose. The whole plant is of a greyish colour, and appears hoary. The leaves stand in pairs; they are oblong, narrow, pointed at the ends, and embrace the stalk at their base: the flowers are very numerous; they stand in little clusters, at the extremities of the ramifications, and are large and white.

It is common on sandy grounds, and is the plant at the roots of which the *Coccus Polonicus* is found in Poland; I have also met with the same insect here at it's roots. C. Bauhine calls it, *Polygonum cocciferum*; Ray, *Knawel incanum flore majore perenne*. The insect, or *coccus*, at it's root, affords a very valuable scarlet dye.

2. *Scleranthus calycibus fructus patulis.*
The Scleranthus, with the cups of the fruit patulous.

The root is oblong, slender, and woody. The stalks are round, jointed, slender, and procumbent. The leaves stand in pairs; they are broadest at the base, and terminate in a point; they are hollowed, and of a pale green colour. The flowers stand in the divarications of the stalks, and, at their extremities, they are small, and of a greenish-white colour.

It is common in sandy places. C. Bauhine calls it, *Polygonum montanum vermiculata foliis*; Dalechamp, *Polycarpum*.

MITELLA.

THE calyx is a perianthium, of a campanulated figure, formed of one leaf, and lightly divided at the edge into five segments: the corolla consists of five patent petals, of an oblong figure, longer than the segments of the cup, and with their ungues narrow, and inserted into the calyx: the stamina are ten filaments, inserted also into the calyx, and broadest at the top: the antheræ are roundish and erect: the germina are two, of an ovato-acuminate figure, parallel, but convergent, and opening inwards: the styles are unequal; the stigmata are simple: the fruit is a capsule, of a globose figure, but with a point, formed of two valves, and opening between them, containing only one cell: the seeds are numerous, and of a roundish oblong figure. The petals in some are entire, in others multifid.

1. *Mitella petalis multifidis.*
The Mitella, with multifid petals.

The root is fibrous; the radical leaves are very large, often of the bigness of the palm of a man's hand; they are broad, roundish, of a dark green, and hairy on both surfaces; they stand on pedicles three or four inches long: the stalks are a foot, or more, high, slender, hairy, round, and naked to the middle, where they have two leaves, smaller, more angulated, and crenated than the radical ones, and placed opposite. The upper

upper half of the stalk forms a kind of spike of flowers; they are small, and of a red colour in various degrees, from deep purple to whitish, and stand on long pedicles.

It is a native of America. Tournefort calls it, *Mitella Americana florum petalis fimbriatis*.

2. *Mitella petalis integris.*

The Mitella, with undivided petals.

The roots are fibrous and white; the stalks are slender, hairy, and procumbent; the leaves are large, of a roundish figure, and dusky-green colour, hairy and crenated round the edges; the flowers stand in a kind of spikes on stalks, of four or five inches long, very slender and erect; they are small, and of a pale red.

It is a native of America, and of some parts of Europe. Tournefort calls it, *Mitella Americana florum petalis integris*; Bodæus, *Cortusa Indica vel Hedera terrestris Indica*, a name since used by many others.

There is but one other known species of this genus; this is, The deep-purple, hairy-flowered *Mitella*. The *Roucou*, or *Mitella Americana maxima tinctoria*, is of a very different class. See *Bixa*.

SAXIFRAGA.

THE calyx is a short, acute, permanent perianthium, formed of a single leaf, divided into five segments: the corolla is larger than the calyx, and consists of five plane petals, narrow at the base; the stamina are ten subulated filaments, alternately shorter; the antheræ are roundish: the germen is of a roundish, acuminate figure, and terminates in two short styles; the stigmata are obtuse; the fruit is a bifid capsule, of a figure approaching to oval; it contains two cells, and opens between the points; the seeds are numerous and small.

This genus comprehends the *Geum* and the *Saxifraga* of Tournefort and others. In the *Saxifragæ* the capsule and germen are surrounded with the receptacle of the corolla: in the *Geum* they stand upon it, and are not surrounded by it.

1. *Saxifraga foliis reniformibus lobatis, caule ramofo, radice granulosa.*

The granulous-rooted, ramofo-stalked Saxifraga, with kidney-shaped, lobated leaves. White Saxifrage.

The root is composed of a number of thick, white fibres, to which are annexed a great many tuberos bodies, of the size of a small pea, and of a purplish colour: the radical leaves are of a roundish but reniform shape, crenated round their edges so deeply, as to be in a manner divided into lobes; they are about three quarters of an inch in diameter, and stand on pedicles three inches long: the stalk is round, thick, ten inches high, and ramofo; the leaves stand alternately, and are more angulated than the radical ones: the flowers are large, white, and beautiful.

It is common in our meadows. C. Bauhine calls it, *Saxifraga rotundifolia alba*; others simply, *Saxifraga alba*. The tuberosities at the root are diuretic; they are kept in the shops, under the name of *Saxifraga seeds*.

2. *Saxifraga foliis cuneiformibus retusis radicalibus sinuato-ferratis, caule paniculato.*

The paniculate-stalked, cuneiform, retuse-leaved Saxifraga. London Pride, or None so pretty.

The root is a cluster of fibres, white and moderately thick; the radical leaves are numerous, arranged in an orbicular form, and procumbent; they are of a figure approaching to round, an inch long, and serrated, and, as it were, prickly round the edges: the stalks are slender, round, hairy, and ramofo; the flowers are small and numerous; when nearly examined, they are extremely beautiful; their ground colour is a pale whitish-red, but they are elegantly spotted with purple.

It

It is a native of the Pyrenean mountains. Ray calls it, *Gem. foliis subrotundis, pistillo floris rubro*. It is frequent in our gardens, and has been found wild on some of the Welsh mountains.

The other species are, 1. The Saxifraga, with cartilaginous, edged, crenated leaves, called silver-edged Sedum. 2. The palmated-leaved, uniflorous Saxifraga. 3. The palmated and cordated-leaved Saxifraga. 4. The little spring Saxifraga, called rue whitlow grass. 5. The suboval, crenated-leaved Saxifraga, with naked stalks, and capitated flowers. 6. The marsh Saxifraga, with oblong, crenated leaves. 7. The subulata-leaved Saxifraga, called pale-flowered, mountain Sedum. 8. The Saxifraga, with linear-ciliated leaves. 9. The purple, heath-like, mountain Saxifraga. 10. The mossy, trifid-leaved Saxifraga. 11. The ferrated, sedum-leaved Saxifraga. 12. The roundish, ferrated-leaved Saxifraga. 13. The longer-leaved Saxifraga. 14. The greater, tridactylate-leaved Saxifraga. 15. The little, round-leaved Saxifraga. 16. The oblong-leaved, ramose-stalked Saxifraga.

HYDRANGEA.

THE calyx is a small, permanent perianthium, formed of one leaf, divided into five segments: the corolla consists of five equal, roundish petals, larger than the segments of the cup: the stamina are ten filaments, alternately shorter, but all exceeding the corolla in length: the antheræ are roundish and didymous; the germen is roundish, and placed under the receptacle; the styles are two, short and distant; the stigmata are obtuse and permanent: the fruit is a roundish, didymous capsule; the two permanent styles make two beaks to it, and it is rendered angular by many ribs. It is coronated by the cup, and divided into two cells by a transverse membrane: the seeds are numerous, angular, acuminate, and very small.

It is a native of North America, described by Gronovius.

ROYENA.

THE calyx is a permanent, ventricose perianthium, formed of a single leaf; and divided into five obtuse segments: the corolla is formed of a single petal; the tube is of the length of the calyx; the limb is patent, reflex, and divided into five oval segments: the stamina are ten very short filaments, growing to the corolla; the antheræ are oblong, acute, didymous, erect, and of the length of the tube: the germen is oval and hairy; it terminates in two styles, somewhat longer than the stamina; the stigmata are simple: the fruit is an oval capsule, formed of four valves, marked with four furrows, but containing only one cell: the seeds are four oblong, triangular nuts, included in a calyptra.

It is an American, described by Houston, under the name of a species of *Staphylo-dendron*.

Class the Tenth. Order the Third.

DECANDRIA TRIGYNIA.

Plants which have in every flower ten stamina and three styles.

MALPIGHIA.

THE calyx is a small, hollow, permanent perianthium, divided into five parts; there is a callous, melliferous glandule placed under each of the retroflex sinus's of this cup. The corolla consists of five large, hollow, kidney-shaped petals, with long and linear unguis: the stamina are ten small, erect, and somewhat broad filaments, placed so as to form a kind of cylinder: the antheræ are simple; the germen is roundish, and very small; the styles are three, erect and short; the stigmata are obtuse: the fruit is a large, globose berry, of an uneven surface, and containing only one cell: the seeds are three obscure, oblong, obtuse, angulated, and contain each an oblong, obtuse kernel.

It is an American, described by Plumier, 36.

BANIS.

BANISTERIA.

THE calyx is a very small, permanent perianthium, with tubercles underneath it; there are two melliferous glandules under every segment of the cup, excepting only one: the segments are five, so that in all there are eight of these glandules: the corolla consists of five large, patent, orbiculated petals, crenated, and with oblong, linear unguis: the stamina are ten very small filaments; the antheræ are simple; the germina are three; they are alated and grow together; the styles are three, and simple; the stigmata are obtuse: the fruit consists of three capsules, running into long ala, containing each only one cell, with little appendages at the sides, and not open: the seed is single, covered and dentated at the lateral margin.

It is an American, described by Plumier, and by Houston under the name of a species of Clematis.

TRIOPTERIS.

THE calyx is a very small, permanent perianthium, divided into five segments: the corolla consists of six seeming petals, oval, erecto-patulous, equal, and permanent, surrounded by three others, smaller than themselves, but equal to one another: the stamina stand out of the petals, and are inserted into the receptacle; they are ten capillary filaments, the exterior ones shorter than the others: the antheræ are simple; the germinæ are trifid; the styles are three, simple and erect; the stigmata are obtuse; there is no pericarpium: the seeds are three, erect and carinated on the back; each of them has externally, at it's base, an ala, and at it's apex two: these ala are what, in the flowering state of the plant, appear to be petals, but they are not truly such.

GARIDELLA.

THE calyx is a small, oblong, erect; acuminate perianthium, composed of five leaves: the corolla has no petals; but there are five long, equal, bilabiated nectaria: the exterior lip stands lowest, and is plane, and divided into two linear, oblong, obtuse segments; the interior lip stands higher, and is short and simple: the stamina are ten subulated filaments, shorter than the corolla; the antheræ are erect and obtuse; the germina are three, oblong, compressed, erect, and acuminate; there are scarce any styles: the stigmata are simple: the fruit consists of three oblong, compressed, acuminate capsules, formed of two valves, with the interior suture convex: the seeds are numerous and short.

Of this genus there is only one species.

GARIDELLA.

Fennel-leaved Nigella.

The root is oblong, thick, and tough, but annual: the stalks are numerous, strait, slender, erect, and ramose; the leaves stand alternately, and there are but few of them; they are oblong, large, and divided into a multitude of fine slender segments: the flowers stand on the tops of the ramifications, and are large, and of a pale whitish colour.

It is a native of France. C. Bauhine calls it, *Nigella Cretica folio foniculi*. It's seeds are of a fragrant smell.

CHERLERIA.

THE calyx is a perianthium, composed of five equal, lanceolate leaves: the corolla has properly no petals: the nectaria are five in number, roundish and emarginated, very small, and placed in a circular direction: the stamina are ten subulated filaments, the alternate ones affixed to the nectarium: the antheræ are simple; the germinæ are oval; the styles are three, and bent back; the stigmata are simple: the fruit is a capsule of an ovated figure, formed of three valves, and containing three cells: the seeds are numerous, convex on one side, and angulated on the other.

It is a native of Switzerland, described by Haller.

DRYPIS.

THE calyx is a permanent perianthium, formed of a single leaf, inflated, and divided into five segments: the corolla consists of five petals; their unguis are of the length of the cup, and narrow: the limb is plane; the bractæ divided into two linear, obtuse segments: the stamina are ten filaments, nearly of the length of the corolla; the antheræ are simple: the germen is globose, the styles are three, simple and petulous; the stigmata are simple: the fruit is a small, globose, covered capsule, with only one cell, in which is a single kidney-shaped seed.

Of this genus there is only one known species.

DRYPIS.

The root is oblong, slender, white, tough, and fibrated: the stalk is angular, erect, jointed, and ramose: the leaves stand in pairs, and are oblong, narrow, deeply lacinated toward the base, and terminate in a long, narrow, prickly point; from the axils of all the leaves rise short branches, the tops of which have two or three flowers arranged into a kind of umbel, and surrounded with spines; they are small and white.

It is a native of Italy. Micheli, who has characterized it accurately, calls it, *Drypis Italica aculeata floribus albis umbellatim compactis*; Morison calls it, *Carduus foliis tenuissimis spinosis*.

CUCUBALUS.

THE calyx is a permanent, inflated perianthium, of a globose figure, formed of a single leaf, and divided into five parts at the end; the corolla consists of five petals, the unguis of which are of the length of the cup; the limb is plane, and the bractæ bifid: the stamina are subulated filaments, usually five in number; the antheræ are oblong; the germen is roundish; the styles sometimes three, sometimes five, of a subulated figure, and longer than the stamina; the stigmata are oblong, hoary, and reflex; the fruit is a small, roundish, acuminate capsule; the seeds are numerous and roundish.

This genus comprehends the *Cucubalus* of Tournefort, and the *Beben* of Malpighi, and many of the *Lychnis* of authors. The figure of the calyx is the great distinguishing character; all the rest is uncertain.

1. *Cucubalus caule ramoso, floribus trigynis, fructu colorato globoso.*

The ramose-stalked *Cucubalus*, with coloured, globose fruit.

Berry-bearing
Chickweed.

The root is oblong, thick, and perennial; the stalks are numerous, round, procumbent, divaricated, and diffused: the leaves are placed two at every joint; they are moderately large, of an oval figure, but pointed at the end; the flowers are small and white; the cup very much inflated, and the fruit a moderately large berry.

It is a native of Italy and Germany. C. Bauhine calls it, *Albine scandens baccifera*; others, *Cucubalus*.

2. *Cucubalus calycibus fructus globosis acuminatis, triginta striis, foliis glabris.*

The smooth-leaved *Cucubalus*, with the ripe cup globose, and marked with thirty striae.

The root is oblong, thick, and fibrated; the stalks grow to two feet high, and are round, hairy, ramose, and striated: the leaves are smooth, oblong, broad, and stand two at each joint: the flowers stand on moderately long pedicels at the tops of the branches, and in the divarications of the stalks; they are small and purplish, and fade as soon as
the

the sun shines upon them: the cup, after the flower is fallen, swells out into a very large capsule, marked with not less than thirty high strise.

It is a native of Spain, where it is frequent in the corn-fields. C. Bauhine calls it, *Lychnis latifolia calycibus turgidis striatis*.

3. *Cucubalus calycibus subovatis glabris reticulato-venosis, capsulis trilocularibus.*

White
Ben.

The smooth, oval-cupped *Cucubalus*, with trilocular capsules.

The root is oblong, white, and woody; the stalk is round, jointed, smooth, ramose, and two feet high: the leaves are large, of an oval figure, smooth, though sometimes accidentally hairy; they stand two at a joint, and are of a pale bluish-green colour: the flowers are moderately large and white; the cups inflated and ventricose; their surface is reticulated, and the longitudinal strise large.

It is common in our corn-fields. C. Bauhine calls it, *Lychnis sylvestris* quæ Ben album vulgo; others, *Papaver spumeum*. The *Lychnis maritima repens* of C. Bauhine and others is only a variety of this species.

The other species are, 1. The common wild, red Campion, or red *Lychnis*. 2. The common white Campion. 3. The uniflorous Campion. 4. The procumbent *Lychnis*, with great, striated cups. 5. The night-flowering Campion. 6. The narrow-leaved Campion, with striated cups. 7. The quadrifoliate, Virginian *Lychnis*. All these, though generally called *Lychnis's* and *Campions*, are properly *Cucubali*.

S I L E N E.

THE calyx is a permanent perianthium, formed of a single leaf, claviform, and divided into five segments: the corolla consists of five petals; their ungues are narrow, of the length of the cup, and emarginated: the limb is plane, obtuse, and emarginated: the nectarium is composed of two denticles, placed in the neck of each petal; the stamina are ten subulated filaments, alternately inserted into the ungues of the petals: the anthers are oblong; the germen is cylindric; the styles are either three or five; they are simple, and longer than the stamina; the stigmata are bent: the fruit is cylindric and covered; it is divided into as many cells as there are styles, and opens in five places at top: the seeds are numerous and kidney-shaped.

This genus comprehends the *Vilago* of Dillenius, and many of the *Lychnis's* of other authors.

1. *Silene hirsuta, petalis emarginatis coronatis, floribus erectis, fructibus reflexis subsessilibus alternis.*

Small-flowered
Campion.

The hairy *Silene*, with erect flowers, and subsessile, alternate fruits.

The root is oblong and white; the radical leaves are three inches long, an inch broad, and somewhat hairy: the stalk is round, hairy, infirm, and a foot and half high: the leaves are like the radical ones, but smaller, and stand two at a joint: the flowers are very small and white, and their cups striated; they stand alternately in the axils of the leaves, toward the top of the stalk.

It is a native of England. Ray calls it, *Lychnis sylvestris flore albo minimo*.

2. *Silene floribus fastigiatis coronatis, foliis superioribus cordatis glabris.*
The fastigiated and coronated-flowered *Silene*, with the upper leaves cordated.

The root is oblong and white; the stalk is smooth, round, jointed, and erect, and has a viscosity over the joints: the leaves are smooth; the lower ones oblong, the upper ones cordated: the flowers terminate the branches, and are moderately large and red.

It is a native of France. C. Bauhine calls it, *Lychnis viscaria purpurea latifolia levis*.

The

The other species of *Silene* are, 1. The ever-green, myrtle-leaved, white Bell. 2. The hyssop-leaved, white-flowered *Silene*. 3. The calyx-veined *Silene*, with mossy flowers. 4. The hairy, white *Lychnis*, with the flowers on one side only of the stalks. 5. The narrow-leaved, Cretic *Lychnis*, with long pedicels to the flowers. 6. The *Lychnis*, with red, scarce visible flowers. 7. The elegantly variegated, garden *Lychnis*, called *Vulnera Christi*. 8. The hairy *Lychnis*, with delicate flowers. 9. The beautiful, pale red-flowered, hairy, narrow-leaved *Lychnis*. 10. The red, Carolina *Campion*, scarce at all hairy. 11. The oval-leaved, Russian *Silene*, with emarginated petals. 12. The narrow-leaved, red *Lychnis*. 13. The little umbelliferous, Pyrenean *Lychnis*. 14. The hairy, mountain *Lychnis*, with mutant flowers. 15. The dwarf, smooth, Alpine *Lychnis*. 16. The grassy-leaved, or mossy mountain *Lychnis*.

STELLULARIA.

THE calyx is a permanent perianthium, composed of five ovato-lanceolate, hollow, acute, patent leaves: the corolla consists of five petals, divided into two, at the extremities, the division reaching down sometimes as far as the umbo, plane, oblong, and falling very quickly: the stamens are ten filiform filaments, shorter than the corolla, and alternately longer and shorter; the anthers are roundish; the germs are roundish; the styles are three, capillary and patent; the stigmas are obtuse; the fruit is an oval, covered capsule, formed of six valves, and containing five cells; the seeds are numerous, roundish, and compressed: some species have five styles; others have the stamens of so little duration, that they are not to be counted.

This genus comprehends the *Aline* of Tournefort.

1. *Stellularia foliis cordatis, floribus pentagynis.*

The cordated-leaved *Stellularia*, with five styles in the flower. Great Marsh Chickweed.

The root is oblong, slender, creeping, and perennial. The stalks are numerous, and grow to two feet high, but they are weak, and scarce able to support themselves erect. The leaves stand two at every joint; they are large, and of a pale green colour, and a little hairy. The flowers are of a fine bright white colour, and are moderately large.

It is common with us in wet places; it puts on various forms, and has been described under them, as if of various species, under the names of *Aline aquatica major*, *Aline nemorum altissima*, and *Aline marina*.

2. *Stellularia foliis lanceolatis serrulatis.*

The *Stellularia*, with lanceolated, serrulated leaves. Stitchwort.

The root is oblong, slender, and creeping. The stalks are numerous, square, hollow, and ten inches, or a foot, high; at every joint stand two rigid, narrow, grassy, and long leaves. From the axils of these, and on the tops of the stalks, grow the flowers; they are very large, and of a pure and bright white colour. The stalk is usually divaricated into two parts toward the top, and these often into two more each, and a flower usually stands also in each divarication.

It is a common plant in our fields and hedges. C. Bauhine calls it, *Caryophyllus holosteus arvensis glaber flore majore*; others, *Gramen leucanthemum majus*.

The other species of *Stellularia* to be mentioned are, 1. The common Chickweed. 2. The lesser Stitchwort, or small-flowered *Holosteus*. 3. The very small-leaved *Stellularia*. 4. The broader, ovated, and thin-leaved *Stellularia*. 5. The nightshade-leaved *Stellularia*. 6. The St John's-wort-leaved *Stellularia*. 7. The nummular-leaved *Stellularia*. 8. The round-leaved, Sicilian *Stellularia*. 9. The auricular-leaved *Stellularia*. 10. The purslane-leaved *Stellularia*. 11. The white, umbellate-flowered *Stellularia*. 12. The serpyllum-leaved *Stellularia*. 13. The linear-leaved *Stellularia*. 14. The narrow-leaved, mossy *Stellularia*. 15. The tamarisk-leaved *Stellularia*. 16. The toad flax-leaved *Stellularia*. 17. The short, grassy-leaved *Stellularia*.

lularia. 18. The fine-leaved, milk-white-flowered Stellularia; and, 19. The capitate-leaved Stellularia.

ARENARIA.

THE calyx is a perianthium, composed of five oblong, acuminate, patent, and permanent leaves: the corolla consists of five oval petals, scarce so long as the leaves of the cup, and fading: the stamina are ten subulated filaments, alternately interior: the antheræ are roundish; the germen is oval; the styles are three, and erecto-reflex: the stigmata are thick: the fruit is an oval, covered capsule, containing one cell, and opening into five parts at the summit: the seeds are numerous, and kidney-shaped.

This genus comprehends many of the species of *Alfine* of Tournefort and others.

1. *Arenaria foliis subovatis acutis sessilibus, corollis calyce brevioribus.*

The suboval, acute, sessile-leaved *Arenaria*, with flowers smaller than the cup.

Small, many-stalked Chickweed.

The root is a cluster of white fibres. The stalks are very numerous, round, slender, and ramose. The leaves are very small, of an oval figure, but pointed at the extremity, and stand on short pedicles; they are placed two at a joint. The whole plant grows to three or four inches high, and forms a tuft, or bush, usually of near as much in diameter. The flowers are white, and extremely small.

It is frequent on walls and in dry places. C. Bauhine calls it, *Alfine minor multicaulis*.

2. *Arenaria foliis filiformibus, stipulis membranaceis vaginantibus.*

The *Arenaria*, with filiform leaves, and membranaceous, vaginating stipule.

Purple Spurrey.

The root is oblong, thick, and white. The stalks are numerous and procumbent; they are green, round, jointed, and four or five inches long. The leaves stand two at a joint, and are oblong, narrow, and pointed at the ends, and have stipule surrounding the stalk at their base. The flowers are small and purple; they stand in divarications of the stalk, and at the tops of the branches.

It is common in dry places. C. Bauhine calls it, *Alfine spergulæ facie minor*, five *Spergula purpurea*. The plant called *Spergula marina*, Sea Spurrey, is a variety only of this species.

The other more remarkable species are, 1. The plantain-leaved *Arenaria*. 2. The purslane-leaved, sea *Arenaria*. 3. The narrower-leaved, ramose *Arenaria*. 4. The short-leaved *Arenaria*. 5. The large-leaved *Arenaria*.

Class the Tenth. Order the Fourth.

DECANDRIA PENTAGYNIA.

Plants which have in every flower ten stamina and five styles.

SPERGULA.

THE calyx is a perianthium, composed of five permanent leaves, of an oval, obtuse figure, hollowed and patent: the corolla consists of five oval, patent petals, hollowed, larger than the leaves of the cup, and very quickly fading: the stamina are ten subulated filaments, shorter than the corolla; the antheræ are roundish; the germen is oval; the styles are five, erecto-reflex, and filiform: the stigmata are thick: the fruit is an oval, covered capsule, formed of five valves, but containing only one cell: the seeds are numerous, rounded, and surrounded with an emarginated rim.

1. *Spergula foliis verticillatis, pedunculis dichotomis.*
The Spergula, with verticillated leaves, and dichotomous peduncles.

Great
Spurrey.

The root is oblong, slender, and white. The stalk is round, hollow, jointed, and eight or ten inches high, of a pale green colour, and, toward the top, ramose. The leaves are half an inch, or more, long, very narrow, and hollowed underneath; they stand in considerable numbers round the stalk, in a radiated manner, at every joint. The flowers are small and white; the anthers yellow.

It is common in corn-fields. C. Bauhine calls it, *Alfine Spergula dicta major*; others, simply, *Spergula*.

2. *Spergula foliis oppositis, pedunculis simplicibus.*
The Spergula, with leaves in pairs, and with simple peduncles.

Knotty
Chickweed.

The root is oblong, slender, and white. The stalks are procumbent, round, jointed, ramose, and five inches long. The leaves stand in pairs, two at every joint; the joints are frequent, and the leaves are oblong, narrow, and pointed. The flowers are large and milk-white; they stand on the tops of the stalks, and in the divarications of the branches.

It is frequent in damp places, in most parts of Europe. C. Bauhine calls it, *Alfine nodosa Germanica*; *Ruppia*; *Arenaria palustris*.

CERASTIUM.

THE calyx is a permanent perianthium, composed of five ovato-lanceolated, acute, and patent leaves: the corolla consists of five obtuse, bifid, erecto-patent petals, of the size of the leaves of the cup: the stamina are ten filiform filaments, shorter than the corolla: the anthers are roundish; the germen is oval: the styles are five, capillary, erect, and of the length of the stamina; the stigmata are obtuse: the fruit is a capsule, of an ovato-cylindric figure, very long, obtuse, crooked, in part covered, containing only one cell, and opening in five places at the top: the seeds are numerous and roundish.

This genus comprehends the *Myosotis* of Tournefort. There is a species which, instead of ten, has only five, stamina in each flower.

1. *Cerastium foliis lineari-lanceolatis obtusis, corollis calyce majoribus.*

The lineari-lanceolate, obtuse-leaved Cerastium, with corolla larger than the cup.

Large flowered, mouse-
ear Chickweed.

The root is oblong and creeping. The stalks are round, weak, in part procumbent, and grow to about six or eight inches long. The leaves stand in pairs, and have no pedicles; they are oblong, narrow, obtuse, and hairy. The stalk about it's middle divides into two parts, these into two more each, and so on to the extremities. The flowers stand in these divarications, and on the tops of the stalks; they are large and white.

It is found in dry, hilly pastures. C. Bauhine calls it, *Caryophyllus arvensis hirsutus flore majore*.

2. *Cerastium erectum villoso-viscosum.*
The erect, hairy, and viscous Cerastium.

Broad-leaved, mouse-
ear Chickweed.

The root is fibrous; the stalks are round, erect, hairy, and five or six inches high. The leaves are placed two at every joint; they are of an oval figure, broad, short, and obtuse at their ends. The flowers are small and white. The whole plant is hairy, and has somewhat viscous about it.

It is common in dry places. Ray calls it, *Alfine hirsuta myosotis latifolia præcoxior*; C. Bauhine, *Alfine hirsuta altera viscosa*.

The

The other species are, 1. The long-leaved *Cerastium*, with larger flowers. 2. The small-flowered, little *Cerastium*, with only five stamina. 3. The Alpine *Cerastium*, with procumbent stalks, and a large, snow-white flower. 4. The large, membranaceous-flowered, hairy, Alpine *Cerastium*. 5. The perfoliate, lychnis-leaved, oriental *Cerastium*. 6. The woolly, linaria-leaved *Cerastium*. 7. The creeping, hoary *Cerastium*. 8. The corniculate *Cerastium*, or horned Chickweed of Clusius. 9. The broader and pointed-leaved *Cerastium*. 10. The narrow, rigid-leaved *Cerastium*. 11. The polygonum-leaved *Cerastium*.

AGROSTEMMA.

THE calyx is a one-leaved perianthium; its tube is ovato-oblong, coriaceous, and marked with ten striae; its limb is of the length of the corolla, and 'tis divided into five slender, permanent segments: the corolla consists of five petals; their ungues are of the length of the tube of the cup; the limb is patent, obtuse, and shorter than the cup, or, at the most, does not exceed it: the stamina are ten subulated filaments: the antheræ are simple: the germen is oval; the styles are five, filiform, erect, and of the length of the stamina: the stigmata are simple: the fruit is a capsule of an oblong, oval figure, covered, formed of five valves, and containing only a single cell: the seeds are numerous, kidney-shaped, and punctated: the receptacles are free, as many as the seeds, and the interior ones the longer.

Of this genus there is only one known species.

AGROSTEMMA.

Cockle.

The root is oblong and white. The stalk is round, erect, hairy, of a whitish-green, and two feet high. The leaves stand in pairs, without pedicles, and surround the stalk at their base; they are three inches long, very narrow, and covered with long, white hairs. The flowers stand at the tops of the branches, and are very large, and of a beautiful deep purple colour.

It is common in our corn-fields. C. Bauhine calls it, *Lychnis segetum major*; others, *Nigellastrum*.

CORONARIA.

THE calyx is a permanent, coriaceous perianthium, formed of a single leaf, of a quincuncial figure, divided into five segments, with smaller angles between: the corolla consists of five petals; their ungues are of the length of the cup, and increased by a margin; their bractæ are cordated, and the limb is plane; the nectarium consists of two denticles in the neck of every petal: the stamina are ten filaments, of the length of the tube of the corolla; the antheræ are incumbent: the germen is of a subcylindric figure; the styles are five, distant, and of the length of the stamina; the stigmata are simple: the fruit is a cylindric capsule, containing one cell, and opening at the top; the seeds are numerous and roundish.

1. *Coronaria tomentosa, foliis ovato-lanceolatis.*

Rose

The woolly *Coronaria*, with ovato-lanceolated leaves.

Campion.

The root is oblong, slender, white, and fibrated; the stalks are round, robust, jointed, woolly, white in colour, and three feet high: the leaves stand in pairs; they are large, broad, of an oval figure, and have no pedicles; they are also white and woolly: the flowers are large, and of a beautiful purple, and they stand in great abundance on the tops of the branches.

It is a native of Italy; with us it is common in gardens. C. Bauhine calls it, *Lychnis Coronaria Dioscoridis fativa*.

2. *Coronaria glabra foliis lineari-lanceolatis.*

Smooth

The smooth *Coronaria*, with lineari-lanceolate leaves.

Cockle.

The root is oblong, slender, white, and woody; the stalk is erect, ramose, round, jointed; smooth, of a pale green, and a foot and half high: the leaves stand in pairs; they

they are very long and narrow, of a pale green colour, and have a few white hairs on them : the flowers are large and numerous ; they stand on moderately long pedicles, are of a pale red, and the petals are emarginated.

It is a native of Sicily. Ray calls it, *Pseudomelanthium glabrum Siculum* ; Boccone, *Lychnis foliis glabris calyce duriore* ; Morison, *Nigellastrum flore rubello*.

LYCHNIS.

THE calyx is a roundish, inflated, permanent perianthium, formed of a single leaf, and divided into five short segments at the edge : the corolla consists of five petals ; their ungues are of the length of the cup, and are plane and membranated : the limb is plain, and the bractæ of the petals are divided into either two or four segments : the nectarium is composed of two denticles, placed in the neck of every petal : the stamina are ten setaceous filaments, longer than the cup : the antheræ are incumbent ; the germen is of a suboval figure ; the styles are five ; they are longer than the stamina, and of a subulated figure ; the stigmata are reflex and boary : the fruit is a capsule, approaching to an oval figure, covered, formed of five valves, and contains only one cell : the seeds are numerous and roundish.

1. *Lychnis petalis quadrifidis, fructu subrotundo.*
The round-fruited *Lychnis*, with quadrifid petals.

Cuckoo-
flower.

The root is oblong and creeping ; the stalks are striated, hollow, jointed, ramose, and two feet high, often of a reddish colour : the leaves stand in pairs, and have no pedicles ; they are long, narrow, and of a deep green ; the flowers stand on the tops of the branches, and are of a bright red : they are large, and so deeply divided, that the petals look ragged or fringed.

It is common in our meadows. C. Bauhine calls it, *Caryophyllus laciniato flore* ; others, *Lychnis plumaria pratensis*.

2. *Lychnis floribus fasciculatis fastigiatis.*
The *Lychnis*, with fasciculated and fastigiated flowers.

Constantinople
flower.

The root is composed of a multitude of thick, divaricated fibres ; the stalks are round, thick, rigid erect, bairy, and hollow ; they grow to two or three feet high : the leaves stand two at every joint ; they have no pedicles, and are large, oblong, broad, pointed at the ends, and of a deep green, hairy and rough to the touch : the flowers stand in large clusters at the tops of the branches ; they are large, and of a fine scarlet colour ; the petals are bifid ; the flowers stand very close in the cluster, and have an agreeable smell.

It is a native of Russia and Tartary ; it is frequent in our gardens, where it is called the *Lychnis*, or Constantinople *Lychnis*. Its flowers vary in colour, and other accidents ; whence Tournefort and others have made several species of it. C. Bauhine calls it, *Lychnis hirsuta flore coccineo major* ; J. Bauhine, *Flos Constantinopolitanus*.

AVERROA.

THE calyx is a small, erect perianthium, composed of five lanceolated, permanent leaves : the corolla consists of five lanceolated petals, erect in their lower part, but patent in the upper : the stamina are ten setaceous filaments, alternately shorter ; the five longest are of the length of the corolla : the antheræ are roundish ; the germen is oblong ; the figure of it obscurely pentagonal : the styles are five, setaceous and erect ; the stigmata are simple : the fruit is an apple, of a turbinated and obtusely pentagonal figure, containing five cells. the seeds are angular, and are separated by membranes.

It is an oriental, figured in the Hort. Mal. 47.

OXALIS.

OXALIS.

THE calyx is a very short, permanent perianthium, divided into five parts: the corolla is divided also into five parts, which cohere only by their unguet, and are erect, obtuse, and emarginated: the stamina are ten erect, capillary filaments; the exterior ones shorter than the others: the antheræ are roundish and falcated: the germen is pentangular; the styles are five, filiform, and of the length of the stamina: the stigmata are obtuse; the fruit is a capsule of a pentagonal figure, containing five cells, and splitting longitudinally at the angles: the seeds are roundish.

This genus comprehends the *Oxys* of Tournefort, and the *Oxyoides* of Garcin. The capsule in some species is short, and the seeds single; in others it is long, and the seeds are numerous.

1. *Oxalis scapo uniflora, foliis ternatis, radice squammoso-articulata*

The single-flowered, ternate-leaved *Oxalis*, with a squamous-articulated root.

Wood
Sorrel.

The root is oblong, of the thickness of a quill, jointed and scaly: the leaves stand three on each pedicle, and are of a cordated form: the pedicles are three or four inches long, very slender, and usually reddish: the flowers stand singly, on pedicles of the same kind; they are large, and of a beautiful flesh colour, or white striated with pale red. The seed-vessel is pentagonal, and, when ripe, bursts on the least touch, and throws out the seeds with great violence.

It is common in our woods. C. Bauhine calls it, *Trifolium acetosum vulgare*; others, *Oxys*, *Acetosella*, and *Lujula*. The leaves are of a very agreeable acid taste, and a conserve is kept of them in the shops, as a refrigerant.

2. *Oxalis pedunculis multifloris, caule ramofo herbaceo.*

The many-flowered *Oxalis*, with a ramose, herbaceous stalk.

Yellow

Wood-sorrel.

The root is oblong, slender, and furnished with a number of fibres: the stalks are slender, ramose, and striated; the leaves stand three together, on long and very slender pedicles, and are somewhat hairy, and more deeply cordated than in the other species: the flowers are moderately large and yellow.

It is a native of Italy. Clusius calls it, *Oxys flore lateo*.

COTYLEDON.

THE calyx is a very small perianthium, formed of one leaf, and divided into five short segments at the edge: the corolla is of a campanulato-turbinated form, lightly divided into five segments, which are rolled back: the nectarium is composed of hollow squamulae, one at the base of each of the germina; the stamina are ten strait, subulated filaments, of the length of the corolla; the antheræ are erect, and furrowed in four places; the germina are five in number; they are oblong, thick, and terminate in so many subulated styles, longer than the stamina: the stigmata are simple: the fruit consists of five oblong, ventricose, acuminate capsules, each formed of a single valve, and opening longitudinally inwards: the seeds are numerous and small; there is sometimes a fifth less in the several parts of the fructification.

1. *Cotyledon foliis rotundis, crenatis, umbilicatis.*

The round, crenated, and umbilicated-leaved *Cotyledon*.

Uenus Na-
vel-Wort.

The root is tuberous, and furnished with a number of fibres; the leaves are round, and half an inch, or more, in diameter, lightly crenated round the edges, sometimes almost entire; they stand on pedicles of two or three inches long, which are inserted into their middle, not at the edge: the stalk is round, and moderately thick; five or

six inches high, and furnished, from the top almost to the bottom, with numerous, oblong, greenish-white, striated flowers.

It grows on old walls, but is not common. I met with it in vast abundance near Shepton Mallet in Somersetshire, on the walls by the road-side. C. Bauhine calls it, *Cotyledon major*; J. Bauhine, *Cotyledon vera radice tuberosa*; and others, *Umbilicus Veneris*.

The other species are, 1. The shrubby, African *Cotyledon*, with orbiculated leaves, with purple edges. 2. The yellow-flowered, oblong-leaved *Cotyledon*. 3. The spotted-leaved, African *Cotyledon*. 4. The long, black, great-leaved, African, shrubby *Cotyledon*. 5. The scarlet, umbellated-flowered *Cotyledon*. 6. The auricula-leaved *Cotyledon*. 7. The orange-coloured flowered, orpine-leaved *Cotyledon*. 8. The oblong, tuberous-rooted *Cotyledon*.

SEDUM.

THE calyx is a permanent perianthium, divided into five parts, erect and acute: the corolla consists of five acuminate, lanceolated, plane, patent petals: the nectaria are five; each is a very small, emarginated squamula, affixed to the outer part of the germen, near the base: the stamens are ten subulated filaments, of the length of the corolla; the anthers are roundish: the germina are five, oblong, and terminate in as many styles, which are shorter than the corolla; the stigmata are obtuse; the fruit consists of five erecto-patent, acuminate, compressed capsules, emarginated toward the base, and opening longitudinally upwards and downwards: the seeds are numerous and small.

This genus comprehends the *Sedum* and *Anacamperos* of Tournefort. The essential character consists in the nectarium. The *Cotyledon crassula sempervivum*, *Rhodiola*, and *Tillaea* are all very nearly allied to this genus: and, in general, nature has made very numerous families of the succulent plants, witness the *Cactus* *Mesembryanthemum*, &c.

1. *Sedum foliis subovatis adnato-fessibilibus, gibbis erectiusculis alternis, racemo triplici.*

The triple-clustered *Sedum*, with subovate, gibbous, alternate leaves. Wall Pepper.

The root is fibrous: the stalks are slender, round, reddish, and succulent; they grow to three or four inches in length, but are scarce able to support themselves erect: the leaves are short, pointed, thick, and succulent, and stand very close upon them: the flowers are beautiful, moderately large, and yellow.

It is frequent on walls, and sometimes on the ground. C. Bauhine calls it, *Sempervivum minus vermiculatum acre*; J. Bauhine, *Sedum parvum flore luteo*.

2. *Sedum foliis planiusculis patentibus serratis, corymbo terminatrice.*

The patent, plane-leaved *Sedum*, with terminatory clusters of flowers. Orpine.

The root consists of a great number of fleshy tubercles, with long fibres among them: the stalk is round, smooth, erect, succulent, often reddish, and grows to two feet high: the leaves stand irregularly, but very close; they are oblong, broad, of a bluish-green, often with some reddishness among it, and are serrated about the edges; the flowers stand in a kind of umbel at the top of the stalk, and are large, and of a beautiful purple: the flowers are sometimes white, and the leaves sometimes entire.

It is common in our pastures. C. Bauhine calls it, *Telephium vulgare*; others, *Anacamperos* and *Crassula*.

3. *Sedum foliis ferratis, corymbo foliofo.**The ferrated-leaved Sedum, with a foliofe corymbus.*

Yellow Siberian Orpine.

The root is composed of tubercles and fibres; the stalks are numerous, round, succulent, and procumbent, except that, when in flower, they are a little raised; they are six or eight inches long: the leaves are of a lanceolated figure, and in part ferrated: the flowers are large, yellow, and very beautiful; they stand in a kind of umbel, with leaves under them.

It is a new discovered species; it's native place Siberia. Amman calls it, *Anacampteros flore flavo*.

The other principal species are, 1. The white-flowered, cylindric-leaved Sedum. 2. The compressed-leaved, rock Sedum. 3. The six-leaved, imbricated, yellow Sedum. 4. The oval, fessile, gibbous-leaved Sedum. 5. The little, shorter-leaved Sedum; and, 6. The taller, succulent-leaved, small-flowered Sedum.

PENTHORUM.

THE calyx is a very small, permanent perianthium, formed of one leaf, divided into five acute, equal segments: there is no corolla; the stamina are two setaceous, equal, permanent filaments, of twice the length of the calyx; the antheræ are roundish and deciduous; the germen is divided into five parts, and terminates in five styles, of a conic figure, erect, and of the length of the stamina: the stigmata are obtuse: the fruit is a single capsule, divided into five parts, with five conic angles, and containing five cells: the seeds are numerous, very small, and compressed.

Of this genus there is only one known species; an American, described by Gronovius, in his *Fl. Virg.* 51.

Class the Tentb. Order the Fifth.

DECANDRIA DECAGYNIA.

Plants which have in every flower ten stamina and ten styles.

PHYTOLACA.

THERE is no calyx; the corolla consists of five roundish, hollow, patent, and permanent petals, coloured, and turned back at their extremities: the stamina are ten subulated filaments, of the length of the corolla; the antheræ are roundish and lateral: the germen is of an orbiculated figure, depressed, and divided externally into two lobes, and terminates in as many very short styles, with simple, permanent stigmata: the fruit is an orbiculated, depressed berry, with ten longitudinal furrows, umbilicated with the pistils, and containing two cells: the seeds are single, smooth, and of a kidney-like shape.

NEURADA.

THE calyx is a very small perianthium, divided into five parts, and placed upon the germen: the corolla consists of five equal petals, and is larger than the cup: the stamina are ten filaments, of the length of the cup: the antheræ are simple; the germen is gibbous; the styles are ten in number, and of the length of the stamina; the stigmata are simple: the fruit is an orbiculated, depressed capsule, convex on the under part, and armed with ascendent prickles; it contains ten cells, in each of which is a single seed.

Of this genus there is only one known species. Jussieu has given it the name of *Triplastrum*.

Class

Class the Eleventh.

DODECANDRIA.

Plants which have in every flower twelve stamina.

OF these some have only one style, others have two, and others numerous ones in each flower. According to this obvious and essential distinction, they are arranged into three orders.

Class the Eleventh. Order the First.

DODECANDRIA MONOGYNIA.

Plants which have in every flower twelve stamina and only one style.

GETHYLLIS.

THE calyx is an inflated, membranaceous spatha, of a lanceolated figure, composed of a single leaf, and containing only one flower: the corolla is formed of a single petal; the tube is extremely long and filiform: the limb is plane, divided into six equal segments, of a lanceolated figure, and but of about a third part the length of the tube: the stamina are twelve, sometimes eighteen setaceous filaments, short, erect, and standing on the tube: the antheræ are oblong; the germen is oblong, and stands sessile within the spatha, under the receptacle of the corolla: the style is filiform, and of the length of the stamina; the stigma is trifid and obtuse; the fruit is an oblong, ventricose, triangular capsule, with three cells; the seeds are numerous.

ASARUM.

THE calyx is a coriaceous, coloured, campanulated, and permanent perianthium, formed of a single leaf, and lightly divided into three erect segments, with their extremities reflex; there is no corolla: the stamina are twelve subulated filaments, of about half the length of the cup; the antheræ are oblong, and grow to the middle of the sides of the stamina: the germen is buried within the substance of the cup; the style is cylindric, and of the length of the stamina; the stigma is stellated, and divided into six reflex segments: the fruit is a coriaceous capsule, immersed in the substance of the cup, and contains six cells; the seeds are numerous and oval.

This genus comprehends the Asarum and the Hypocistis of Tournefort and others; the Hypocistis only adds a third part to the number, of all the organs of the fructification.

1. *Asarum foliis subcordatis petiolatis.**The subcordated and petiolated-leaved Asarum.*

Asarabacca.

The root is oblong, angular, nodose, slender, and creeping; the leaves are of a roundish figure, auriculated, thick, rigid, and of a deep green colour; they are an inch, or more, in diameter, and stand on long and moderately thick pedicles: the flowers are small; they stand on very short pedicles, rising immediately from the root, and have a purplish tinge.

It is a native of many parts of Europe; we keep it in gardens. It is a vomit, but is rarely used.

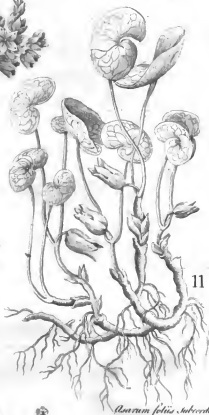
2. *Asarum foliolis sessilibus acuminatis.**The sessile and acuminated-leaved Asarum.*

Hypocist.

The base of this plant adheres to the root of some of the cistus; from this it rises with a thick, fleshy, juicy, yet tough, stalk, three or four inches high, and of a reddish,



10



11



Cereus



Cajana

Ruta foliis ternatis angustis



Phytolacca



Carya



Lythrum



Bauhinia



Dictamnus



Melia



Lycium



Agrimonia



Poinciana



Zugophyllum



Helianthus



Gardella



Sempervivum



U. G. G. G.



dish, yellowish, or whitish colour; this is usually about half an inch thick at the base, and an inch and half, or more, at the top: it is surrounded every-where with a number of squamose leaves, half an inch long, and a third of an inch broad, of a yellowish or purplish colour, and terminating in an obtuse point: the flowers are numerous, large, and usually of a purplish colour; they stand in clusters at the tops of the stalk, with leaves intermixed among them: it is easily separated at it's base from the root it grows on, and leaves a hollow in it, but without the least vestige of any fibres.

It is a native of the East, and of some parts of Europe. C. Baubine calls it, *Hypocistis officinarum*. It varies in colour extremely, and these varieties have been described as species.

We used to have an expressed juice of it kept in the shops, as an astringent; but at present all that is found there is counterfeit.

RHIZOPHORA.

THE calyx is a perianthium, divided into four oblong, erect, acuminate, and permanent segments: the corolla is erect, and shorter than the calyx; it is divided into four lanceolate segments: the stamina are twelve erect filaments, alternately shorter; the anthers are small; the receptacle is oval; the germen is subulate; there is scarce any style; the stigma is acute: there is no pericarpium: the receptacle is of a subovate figure, fleshy, and contains the base of the seed, which is single, very long, of a clavated figure, and-pointed.

This genus comprehends the Mangles of Plumier; the stamina vary from eight to twelve.

LYTHRUM.

THE calyx is a cylindric, striated perianthium, composed of a single leaf, divided into twelve denticles, alternately smaller at the edge: the corolla consists of six oblong, obtuse, patent petals, inserted by their ungues into the segments of the cup: the stamina are twelve filiform filaments, of the length of the cup; the upper ones are shorter than the inferior; the anthers are simple and assurgent; the germen is oblong; the style is subulate, of the length of the stamina, and declinate: the stigma is orbiculated and assurgent; the fruit is an oblong, acuminate, covered, and bilocular capsule; the seeds are numerous and small.

This genus comprehends the *Salicaria* of Tournefort. In some of the species, however, a sixth part of the number is wanting.

1. *Lythrum foliis oppositis.*
The opposite-leaved Lythrum.

Purple-Spiked
Willow-herb.

The root is white, woody, thick, and divaricated; the stalks are angular, thick, robust, and four or five feet high; they are usually of a reddish colour: the leaves stand very irregularly, sometimes two, sometimes three, or more, at a joint; they are long, narrow, and pointed at the extremity: the flowers are of a fine florid red; they stand in long spikes on the tops of the stalks and branches.

It is common with us about waters. C. Baubine calls it, *Lyfimachia purpurea spicata*. The stalk is sometimes hexagonal, sometimes quadrangular; the leaves sometimes stand alternately. Under these several forms, it has been described as so many distinct species.

2. *Lythrum foliis alternis linearibus, floribus hexandris.*

The alternate, linear-leaved Lythrum, with six stamina in the flower.

The root is fibrous; the stalks are round, striated, green, and eight inches high: the leaves stand alternately; they are oblong, narrow, and very like those of the common hyssop: the flowers are moderately large, oblong, and of a pale blue colour; they stand either singly, or two together, in the axils of the leaves, from the bottom to the top of the plant.

It is found about waters. C. Bauhine calls it, *Hyssopifolia*; Tournefort, *Salicaria hyssopi folio latiore*.

The other species are, 1. The roundish-leaved *Lythrum*. 2. The very narrow-leaved *Lythrum*. 3. The broader, short-leaved *Lythrum*. 4. The narrow and short-leaved *Lythrum*.

Class the Eleventh. Order the Second.

DODECANDRIA DIGYNIA.

Plants which have twelve stamina and two styles in each flower.

AGRIMONIA.

THE calyx is a small, permanent perianthium, formed of a single leaf, divided into five segments, placed on the germen, and surrounded with another cup: the corolla consists of five plane, emarginated petals, with narrow ungues inserted into the calyx: the stamina are an uncertain number of filaments, seven, ten, twelve, or more; they are very slender, shorter than the corolla, and inserted into the calyx; the antheræ are small, didymous, and compressed: the germen stands under the receptacle; the styles are two; they are simple, and of the length of the stamina; the stigmata are obtuse: there is no pericarpium: the calyx closes about it's neck, and becomes hard: the seeds are two, and round.

This genus comprehends the *Agrimonia* and *Agrimonioides* of Tournefort. In the *Agrimonia*, the exterior calyx grows to the interior one, and the seeds are two: the stamina from twelve to twenty; and the fruit surrounded with hairs. In the *Agrimonioides*, the exterior calyx is free from the inner one; the seed is single, and the stamina are usually seven.

1. *Agrimonia foliis omnibus pinnatis, fructibus bispidis.*

The Agrimonia, with all the leaves pinnated, and with bispid fruit.

Agrimony.

The root is thick, oblong, fibrated, and of a dusky colour; the radical leaves are four or five inches long, and are composed of four or five pairs of oval, serrated pinnae, adhering, without pedicles, to a middle rib, terminated by a single, larger leaf at the end: the stalk is round, robust, hairy, erect, and two feet high; the leaves stand alternately on it, and are like the radical ones, but smaller: the flowers are large and yellow; they stand in a long slender spike at the top of the plant.

It is common in our pastures. C. Bauhine calls it, *Eupatorium veterum five Agrimonia*. It has been esteemed a cephalic, but now is not used.

2. *Agrimonia pinnis rotundioribus, fructibus glabris.*

The smooth-fruited Agrimony, with roundish pinnae.

**Bastard
Agrimony.**

The root is oblong, thick, woody, and reddish; the radical leaves are pinnated, but the pinnae are few, and of a roundish figure; they stand on long, hairy pedicles: the stalks are numerous, in part procumbent, hairy, reddish, and ramose; the leaves stand alternately, and are small, short, and auriculated at the base; the flowers are small, few in number, and stand at the tops of the branches; they are yellow, and quickly fade: the fruit is smooth, and of the size of a wheat-corn.

It is a native of Italy; we have it in gardens. Tournefort calls it, *Agrimonioides*; C. Bauhine, *Agrimonia similis*.

The other species are, 1. The larger-leaved, sweet-scented *Agrimony*. 2. The smaller-leaved, sweet *Agrimony*.

Class the Eleventh. Order the Third.

DODECANDRIA POLYGYNIA.

Plants that have twelve stamina and several styles in each flower.

SEMPERVIVUM.

THE calyx is a small, permanent perianthium, divided into twelve hollow, acute segments: the corolla consists of twelve oblong, lanceolated, acute, hollow petals, a little larger than the cup: the stamina are twelve thin, subulated filaments, of half the length of the corolla; the anthers are roundish: the germina are twelve in number; they stand erect, and are placed circularly; they terminate in the same number of styles, which are patent, and have acute stigmata: the fruit are twelve oblong, compressed capsules, placed in an orbicular order, acuminate outwards, and opening internally: the seeds are numerous, roundish, and small: the number of the stamina and of the germina is not absolutely determinate and certain in this genus.

1. *Sempervivum foliis radicalibus carnosiss, caulinis, imbricatis, membranaceis, corymbo racemoso inflexo.* **Great House-leek.**
The fleshy-leaved Sempervivum, with a racemous and inflex corymbus.

The root is composed of a number of white fibres; the radical leaves are oblong, pointed, very thick and juicy, even at the edges, and disposed in a circular form: the stalk is thick, succulent, round, and usually reddish; it is thick beset with small leaves, pointed at the extremities: it grows to a foot high, and at the top divides into several ramifications, which turn back, and have on them a number of beautiful, pale red flowers.

It is common with us on house-tops. C. Bauhine calls it, *Sedum majus vulgare*.

2. *Sempervivum caule inferne nudo, laevi, ramofo.* **Tree Houseleek.**
The Sempervivum, with the stalk at the bottom naked, smooth, and ramofo.

The root is brachiated; the stem grows to the thickness of a man's arm, and to three or four feet high; it is naked, and of a reddish colour, and sends off a number of branches as thick as a man's thumb, which divide into others; and at the extremities of these stand round clusters of leaves, arranged in the manner of the radical leaves of the common Houseleek; they are of a bright green colour, oblong and broad, narrowest at the base, and very lightly crenated about their edges, very succulent and tender. From the center of some of the clusters of these leaves, on the upper branches of the plant, there grow thick pedicles, which support numbers of large, whitish-yellow flowers.

It is a native of the islands of the Archipelago; it is common in our green-houses Dodonæus calls it, *Sedum arborefcens majus*.

Class the Twelfth.

ICOSANDRIA.

Plants which have about twenty stamina in every flower.

THE classical character of the Icosandria is this: the calyx is always hollow, and formed of a single leaf: the corolla is affixed by it's ungues to the sides of the calyx; and the stamina are affixed either to the side of the calyx, or to the corolla: the stamina are always more than twelve, usually twenty, or about that number; but this is not so determinate and certain in them, as alone to constitute a generic character.

Of

Of the Icosandria some have only one style in the flower, some have two, some three, some four, some five, and some a considerable number; they are, therefore, to be arranged into six orders, according to this distinction, under the names of Monogynia, Digynia, &c.

Class the Twelfth. Order the First.

ICOSANDRIA MONOGYNIA.

Plants which have hollow, monophyllous cups, with the corollæ affixed by their ungues to the sides of them, and about twenty stamina, inserted either into the corolla; or into the side of the cup; and which have only one style.

CACTUS.

THE calyx is a deciduous perianthium, formed of a single leaf, of a tubulato-concave form, standing on the germen, and covered with a kind of squamose leaves: the corolla consists of a great number of broad, obtuse petals, the exterior ones short, the interior longer and connivent: the stamina are numerous, tubulated filaments, inserted into the calyx, and shorter than the corolla: the antheræ are oblong and erect: the germen stands under the tube of the cup: the style is cylindric, and of the length of the stamina: the stigma is capitated, or multifid: the fruit is an oblong, umbilicated berry, containing only one cell, and covered with little leaves, like the calyx: the seeds are numerous, roundish, and small.

This genus comprehends the *Cereus*, *Opuntia*, *Melocactus*, *Tuna*, and *Pereskia* of authors. The *Cereus* is a long, cylindraceo-angulated plant; the *Melocactus* a roundish and angulated one; the *Opuntia* is ramose and dichotomous, and the *Pereskia* is arborescent and foliose, but the fruit also is foliose.

1. *Cactus quatuordecim-angularis subrotundus.*
The roundish Cactus, with fourteen angles.

**The Melon-
thistle.**

The root is fibrous. The plant rises in an oblong, roundish form, resembling a melon; it's height is about twelve inches, it's diameter nine or ten: it's surface is raised into fourteen longitudinal ridges, high, and beset with tubercles, from which grow series of very sharp prickles; the tubercles are about nine on each ridge; the spines on each tubercle are about ten, and their length an inch. On the summit of the plant there stands a fine long and white downy matter, an inch high, and four inches in diameter in the tuft; among this stand longer spines, and the flowers, which are oblong, and of a fine red colour.

It is a native of the warmer parts of America; C. Bauhine calls it, *Melocactus Indie occidentalis*.

2. *Cactus sexangularis longus rectus.*
The long, sexangular, strait Cactus.

**The Torch-
thistle.**

The root is fibrous. The plant consists of a single stem, or body, of twenty, thirty, or more, feet in height, and of about five inches in diameter; of an angular figure, and deep green colour, and armed with clusters of sharp, firm spines, growing from tubercles, placed along the ribs; the number of ribs is, in general, six, but this is not certain; toward the top there are often eight or ten, and, toward the bottom, only five. The flowers grow from the ribs, usually about the middle of the plant; they are, when open, of the size of a large rose, and consist of not less than forty petals; the outer ones purplish or greenish, the inner ones white; these stand but a very little time.

It is a native of Surinam, and many other parts of South America; we have it in our stoves. Herman and Ray call it, *Cereus erectus altissimus Surinamensis*.

3. *Cactus compressus articulatus ramosus, articulis ovato-oblongis subinermibus.*

The compressed, articulated Cactus, with oval joints, and few prickles.

The Cochineal Plant.

The root is fibrous. The plant is composed of a number of articulations, and grows to ten or twelve feet high. An oval body, thick, succulent, green, and eight or ten inches long, and six in diameter, first appears above the ground; from this grows another such body, and from this others, each of which again produce more of the same kind, so as, in the whole, to compose a ramose body, composed of these articulations, fixed to another without pedicles; they are thick, succulent, and full of tubercles, from each of which grow a number of spines, but in this species they are less rigid and prickly than in the former. The flowers grow immediately out of the surface of these articulations; they are very large, and of a beautiful deep red, or of a paler red, striated with a deeper. The fruit is large and succulent; it's juice of a blood red.

It is a native of Jamaica, and other parts of the West Indies, but no where is so plentiful as in Mexico, where the Cochineal animal feeds on it. Dillenius calls it, *Tuna minor flore sanguineo*; others, *Opuntia coccinellifera*.

4. *Cactus caule tereti arboreo spinoso, foliis lanceolato-ovatis.*

The arborescent, round-stalked Cactus, with lanceolato-oval leaves.

The Pereskia.

The root is moderately thick, and divaricated. The plant assumes the form of a common tree. The trunk is thick, round, and beset with spines, which are very rigid, long, and sharp. The leaves stand irregularly; they have a downy matter at their insertion on the stalks, and are of an oblong, and somewhat pointed, figure, thick, succulent, and green. The flowers are white, the fruit yellow and succulent, and covered with a kind of little leaves.

It is a native of Jamaica. Dillenius calls it, *Pereskia aculeata, flore albo, fructu flavescente*; Plukenet, *Portulaca Americana latifolia ad foliorum ortum lanugine obducta, longioribus aculeis horrida*.

These four species express the four principal forms and manners of growing of the Cacti.

The other species are very numerous. Those more usually kept in our stoves are, 1. The round Cactus, with large tubercles. 2. The long, quadrangular Cactus, with compressed angles. 3. The tall, octangular Cactus, with obtuse angles. 4. The common, oval, articulated Cactus, or *Opuntia*. 5. The great, articulated Cactus. 6. The bluish-flowered, great-spined, oval-jointed Cactus. 7. The climbing Cactus, with five obtuse angles. 8. The little, ten-angled, very-spinose Cactus. 9. The triangular, scandent, articulated Cactus.

PHILADELPHUS.

THE calyx is a permanent perianthium, formed of a single leaf, divided into four acuminate segments: the corolla consists of four large, patent, roundish, emarginated petals: the stamina are twenty subulated filaments, of the length of the cup: the anthers are erect and quadrifid: the germen stands below the receptacle: the style is divided into four parts: the stigmata are simple: the fruit is an oval capsule, pointed at each end, and surrounded in the middle by the cup; it is composed of four valves, and contains as many cells: the seeds are numerous, oblong, and small.

This genus comprehends the *Syringa* of authors. There is only one known species of it.

PHILADELPHUS.

The root is brachiated and spreading. The shrub grows to six or eight feet high. It's bark is brown; it's wood brittle. The young shoots are long and green. The
 5 Y leaves

leaves stand in pairs, and are large, oblong, broad, pointed at the extremity, and crenated about the edges; they are two inches and a half long, and near two inches broad, rugose, and of a pale green colour. The flowers stand in little clusters, on the extremities of the branches; they are large, white, and very fragrant.

It is a common shrub in our gardens. C. Bauhine calls it, *Syringa alba*, five Philadelphus Athenæi.

EUGENIA.

THE calyx is a permanent perianthium, composed of a single leaf, divided into four oblong, obtuse, hollow segments, and pregnant with a germen: the corolla consists of four oblong, obtuse, hollow petals, and is twice as large as the cup: the stamina are a great number of filaments, of the length of the corolla, and inserted into the calyx: the antheræ are small; the germen is turbinate, and stands under the receptacle: the style is simple, and of the length of the stamina: the stigma is simple: the fruit is a quadrangular, coronated drupe, containing only one cell: the seed is a roundish, smooth nut.

EUGENIA.

The Silver tree.

The root is long and brachiated. The tree grows to twenty feet high; its trunk is straight and regular; its branches long; its bark of a pale grey, and variegated with spots of a bright silvery white. The leaves stand in pairs; they are smooth, very thin, and of a greenish-yellow, an inch long, and near as broad at the base, whence they gradually diminish to a point; they are undivided at the edges, and have scarce any pedicles. The flowers are small and whitish, and grow at the axils of the leaves.

It is a native of Jamaica. Sir Hans Sloane calls it, *Myrsinolia arbor cortice argenteo, flore pallide albicante*.

PSIDIUM.

THE calyx is a campanulated perianthium, composed of a single leaf, lightly divided into five oval segments: the corolla consists of five oval, hollowed, patent petals: the stamina are a great number of filaments, shorter than the corolla, and inserted into the calyx: the antheræ are small; the germen is roundish, and stands under the receptacle: the style is subulated, and very long: the stigma is simple: the fruit is a very large, oval berry, containing one cell, and coronated by the calyx: the seeds are numerous, very small, and nidulant.

This genus comprehends the Guaiacana of Tournefort.

Psidium ramis quadrangulis.

The quadrangular-branched Psidium.

The root is large and spreading; its bark is of a brownish-red. The tree grows to five-and-twenty feet high, and its trunk to a foot and a half in diameter. The bark of the young shoots is reddish, or greenish; the leaves are oblong, thick, and pointed at the ends, of a dark green colour, smooth on the upper side, and scabrous underneath. The flower is of the size of that of a quince, and white. The fruit is of the size of a moderately large pear, usually of a reddish colour, and of an agreeable taste; but this, as well as the colour, is very different in the different stages of maturity. The fruit is eaten, and the bark of the root is used as an astringent.

PUNICA.

THE calyx is a permanent perianthium, of a campanulated figure, composed of a single leaf, coloured, and divided into five segments at the edge: the corolla consists of five roundish, erecto-patent petals, inserted into the calyx: the stamina are numerous, capillary filaments, shorter than the cup, and inserted into the calyx: the antheræ are oblong; the germen stands below the receptacle; the style is simple, and of the length of the stamina: the stigma is capitated: the fruit is a large, globose apple, coronated with the calyx, and formed into nine cells: the seeds are numerous, roundish,

roundish, and succulent; the receptacle is membranaceous, and divides every cell of the fruit into two parts.

Of this genus there is only one known species.

PUNICA.

The Pomegranate-tree.

The root is brachiated and large. The form of the plant is naturally that of a shrub, though, by culture and management, it sometimes arrives at the height of a small tree. The branches are long; the twigs long, slender, angular, and armed with sharp and rigid spines. The leaves stand inordinately; they are oblong, moderately broad, of a bright green, obtusely pointed, and placed on oblong pedicles, of a reddish colour. The flowers grow from the sides of the branches; they are large, and of a fine deep red colour. The fruit is of the bigness of an orange, round, and covered with a hard rind.

It is a native of Italy, Spain, and Africa. Lobel calls it, *Malus Punica*; Tournefort, *Punica quæ malum granatum fert*. The flowers are sometimes double, in which state they are called *Balaustines*, or the flowers of the wild pomegranate, and the fruit varies greatly in size and colour with culture; hence it is that we meet with the names of many species of the *Punica*, though they are but imaginary ones.

The flowers of the Pomegranate, and the bark of the fruit, are strongly astringent.

MYRTUS.

THE calyx is a permanent perianthium, formed of a single leaf, erect, divided into five segments, and pregnant with a germen at it's base: the corolla consists of five large, oval, undivided petals, inserted into the calyx: the stamina are a number of capillary filaments, of the length of the corolla, and inserted into the calyx: the antheræ are small; the germen stands below the receptacle; the style is simple, and not shorter than the stamina: the stigma is obtuse: the fruit is an oval berry, umbilicated by the cup, shut up, and contains three cells: the seeds are single, and kidney-shaped.

Myrtus floribus solitariis, calyce fructus diphyllus.

Common

The single-flowered Myrtus, with the cup of the fruit diphyllous.

Myrtle.

The root is brachiated and spreading. The trunk is thick and robust, and it's bark reddish. The shrub grows to six, eight, or more, feet in height. The leaves are an inch long, half an inch broad, pointed at the ends, and of a strong green. The flowers stand singly, and are large and white. The berries are oblong, and black, when ripe.

It is a native of Italy, France, and Asia; it is common in our gardens. C. Bauhine has made three species from this one, in it's different appearances. He calls them, 1. *Myrtus Batlica latifolia*. 2. *Myrtus minor vulgaris*. 3. *Myrtus foliis minimis et mucronatis*; it's leaves, indeed, differ extremely in the various plants of it.

The other species are, 1. The broad and more obtuse-leaved *Myrtus*. 2. The cluster, bay-leaved *Myrtus*. 3. The narrow-leaved *Myrtus*. 4. The broad, short-leaved, clustered *Myrtus*. Several of these species have their berries sometimes white, when ripe; and this has been made a new resource of imaginary species.

GARCINA.

THE calyx is a permanent perianthium, formed of four roundish, obtuse, hollow, patent leaves: the corolla consists also of four roundish, hollow, patent petals, and is somewhat larger than the cup: the stamina are sixteen erect filaments, placed so as to form a cylindric body; they are simple, and shorter than the cup: the antheræ are roundish; the germen is suboval; the style is scarce apparent: the stigma is plane, patent, and peltated; it is permanent, and is divided into eight obtuse segments: the fruit is a large, coriaceous, globose berry, containing only one cell, and coronated: the seeds are eight, convex on one side, angular on the other, villous and fleshy.

AMYGDALUS.

AMYGDALUS.

THE calyx is a deciduous perianthium, formed of a single leaf, of a tubulated figure, divided into five obtuse, patent segments: the corolla consists of five petals, of an oblong, oval figure, obtuse, hollow, and inserted into the calyx: the stamina are thirty filiform, erect filaments, shorter than the corolla, and inserted into the calyx: the antheræ are simple: the germen is roundish and villous: the style is simple, and of the length of the stamina: the stigma is capitated: the fruit is a great hairy, roundish drupe, with a longitudinal furrow: the seed is an oval, compressed nut, with the sutures prominent on each side, with reticulated furrows, and punctated with holes.

This genus comprehends the Amygdalus and the Perfica of authors. The Amygdalus has the fruit dry and coriaceous; the Perfica has it soft and pulpy.

1. *Amygdalus foliis petiolatis, ferraturis infimis glandulosis.*

The Amygdalus, with petiolated leaves, and the lower ferratures glandulous.

The Almond-tree.

The roots are brachiated, large, and spreading. The trunk is moderately large; the tree twenty or thirty feet high. The leaves are long, narrow, pointed at the extremities, and serrated about the edges. The flowers are moderately large, and beautiful; they are of a pale flesh colour. The fruit is an inch long, and the stone nearly of it's whole size, somewhat compressed, and contains an oblong, compressed kernel, which is the Almond.

It is a native of Africa, but is now common throughout Europe. The Bitter Almond is the produce of the same species with the sweet. Authors distinguish them, indeed, by the names of Amygdalus dukis, and Amygdalus amara; but there is no distinction, except in the taste of the kernel.

The oil of the bitter Almond is sweet, and much more frequent than that of the other, being almost universally sold in the shops under it's name.

2. *Amygdalus foliorum ferraturis omnibus acutis.*

The Amygdalus, with all the ferratures of the leaves acute.

The Peach-tree.

The root is brachiated and spreading. The trunk grows to five inches in diameter; the branches are very long and spreading, and the tree, when a standard, will rise to twenty feet high. The bark is a reddish-brown, and smooth; the wood firm and reddish. The leaves are long, and somewhat broad, of a glossy green, serrated about the edges, and of a bitterish taste. The flowers are of a pale red; the fruit large and succulent, and the stone large.

It is a native of Persia, and is thence called Malus Perfica by authors. A syrup of the flowers is a gentle emetic.

Authors have made many imaginary species of the Peach-tree, from the slight differences of the fruit; but these are mere varieties. The only really distinct species we have to mention of this genus, beside the two already described, are, 1. The dwarf, Indian Almond; and, 2. The dwarf, African Peach.

PRUNUS.

THE calyx is a deciduous perianthium, composed of a single leaf, of a campanulated form, and divided into five obtuse, hollow, reflex segments, even at the edges: the corolla consists of five large, roundish, hollowed, emarginated petals, inserted into the calyx by their ungues, and patent: the stamina are about twenty-five filaments, of a subulated figure, nearly of the length of the corolla, and inserted into the calyx: the antheræ are didymous and short: the germen is roundish and entire: the style is filiform, and of the length of the stamina: the stigma is orbiculated and entire: the fruit is a roundish drupe, with a longitudinal furrow: the seed is a roundish, compressed, acute nut, with the sutures standing out each way in an edge.

This

This genus comprehends the *Prunus* and *Armeniaca*, the Plum and the Apricot of authors.

1. *Prunus foliis lanceolato-ovatis.*
The *Prunus*, with lanceolato-oval leaves.

The common
Plum-tree.

The root is brachiated and spreading. The tree grows to a considerable height. The leaves are oblong, broad, approaching to an oval figure, but pointed at the end, of a dark green colour, and serrated at the edges. The flowers are large, and white. The fruit is naturally large, blackish, and it's pulp of a sweet taste.

It is a native of most parts of Europe, and has been so altered by culture, as to produce a vast variety in it's fruit; whence authors have made many new species, on a very bad foundation. Authors call this native stat. of the tree *Prunus*, *Prunus domestica*, and *Prunus fructu magno dulci atro caruleo*.

The Prunes of the shops are the fruit of this dried.

2. *Prunus foliis ovatis cordatis.*
The *Prunus*, with cordated, oval leaves.

The Apri-
cot-tree.

The root is large and spreading. The tree grows to thirty feet, or more, in height, and it's trunk to a considerable thickness. The leaves are of a roundish figure, approaching to oval, cordated at the base, and serrated round the edges. The flowers are large, beautiful, and of a pale red colour. The fruit is large, and it's pulp sweet. Culture makes a great variation in the fruit of this tree, and those who make distinct species of the great and little, the red, the black, and the yellow Plums, have made as many also of the Apricots. All this, however, is erroneous; these are varieties, not species.

The Apricot-tree is a native of Armenia.

3. *Prunus spinosa foliis lanceolatis.*
The *spinosa Prunus*, with lanceolated leaves.

The Sloe
Bush.

The root is spreading; the shrub low; it's bark blackish. The leaves are of a figure approaching to oval, but pointed at the extremities, and serrated. The flowers are small and white; the fruit small, round, and of a bluish-black colour.

It is common in our hedges. It's fruit is astringent, and an inspissated juice of it is called the German *Acacia*, and used in the place of the true *Succus Acacie*.

The reader will easily be convinced that a dissertation on the variety of Plums and Apricots would be the business of a writer on gardening, not on Botany. Linnæus has included, in some of his latest works, the *Cerasus* and *Padus*, in this genus of *Prunus*, but the figure and structure of the fruit, &c. forbid our assent to this.

C E R A S U S.

THE calyx is a deciduous perianthium, formed of a single leaf, of a campanulated figure, lightly divided into five obtuse, hollow, serrated, and reflex segments: the corolla consists of five hollow, roundish, large, emarginated patent petals, inserted into the calyx: the stamina are about thirty subulated filaments; they are nearly of the length of the corolla, and are inserted into the calyx: the antheræ are didymous and short: the germen is roundish, and has a longitudinal furrow in it: the style is filiform, and of the length of the stamina: the stigma is orbiculated, and emarginated on one side: the fruit is a drupe, of a subglobose figure, with a longitudinal furrow: the seed is a nut, of a subglobose figure, with the interior suture rising into a little edge.

1. *Cerasus foliis ovato-lanceolatis.*
The *Cerasus*, with ovato-lanceolate leaves.

The Red
Cherry-tree.

The root is brachiated and large. The tree grows to a moderate size, and spreads out greatly in branches. The leaves are oblong, serrated, and pointed at the extremities. The flowers are large and white; the fruit is naturally round, large, and

red. The Heart Cherry, the May-dake Cherry, and all the other large red Cherries, are varieties of this species, and are mostly owing to culture.

2. *Cerasus foliis ovatis.*
The oval-leaved *Cerasus*.

The Rock
Cherry.

The root is brachiated; the trunk thick, and usually tortuous; the tree not very tall, but spreading. The leaves are oval, approaching to round, but little longer than wide, of a bright green colour, and serrated round the edges. The flowers are large, white, and fragrant. The fruit is small, roundish, black, and bitter to the taste: it's juice is of a deep purple colour.

It is a native of many of the northern parts of Europe. J. Bauhine calls it, *Cerasus sylvestris amara* Mahaleb putata; C. Bauhine, *Ceraso affinis*; Camerarius, Mahaleb.

The other really distinct species of this genus are, 1. The round-leaved, Alpine *Cerasus*. 2. The cluster *Cerasus*. 3. The small-fruited *Cerasus*.

PADUS.

THE calyx is a permanent perianthium, formed of a single leaf, of a campanulated figure, villose at the base, divided into five segments, patent, and scarce at all reflex: the corolla consists of five large, roundish, patent petals, inserted by their ungues into the edge of the calyx: the stamina are twenty or thirty filaments, of a subulated figure, nearly of the length of the corolla, and inserted into the calyx: the anthers are roundish; the germen is roundish; the style is filiform, and of the length of the stamina: the stigma is obtuse and entire; the fruit is a roundish drupe: the seed is an oval, acuminate nut, with a furrow: the receptacle of the flower, which invests the inner surface of the cup, is hairy in this genus.

This comprehends the *Laurocerasus*, and *Cerasus avium* of authors.

1. *Padus glandulis duabus dorso foliorum innatis.* The
The *Padus*, with two glandules on the back of the leaf. Laurel.

The root is brachiated and large. The tree grows to a moderate size; it's trunk is thick, and usually tortuous; the young shoots are green. The leaves are green all the winter; they are four inches long, two broad, even at the edges, and of a firm structure. The flowers are small, white, and clustered together. The fruit is large, somewhat oblong, and black, when ripe.

It is a native of the East. Clusius first brought it into Europe, in 1576; it is now every-where in our gardens. Authors call it, *Laurocerasus*, and *Laurocerasus vulgaris*.

2. *Padus glandulis duabus basi foliorum subjectis.* The Bird's
The *Padus*, with two glandules at the base of the leaves. Cherry.

The root is brachiated and spreading. The tree grows to a moderate height. It's bark is brown; it's young shoots reddish. The leaves are oblong, broad, serrated, and of a dark green colour on the upper side, and whitish underneath, when the fruit is ripe. The flowers are large and white; they stand on separate pedicles, on a long stalk, forming a kind of spike. The fruit is black, when ripe, and of a sweet taste, but not very agreeable.

It is a native of the north of England. C. Bauhine calls it, *Cerasus racemosa sylvestris fructu non eduli*.

The only known species, beside these, is the lesser Portugal Laurel, with oval leaves.

STYRAX.

THE calyx is a short, erect, cylindric perianthium, formed of a single leaf, and divided into five segments: the corolla is of an infundibuliform shape, and consists of a single petal; the tube is cylindric, and no longer than the cup: the limb is large, patent, and divided into five lanceolated, obtuse segments: the stamina are numerous filaments, placed in a circular direction, of a subulated figure, and inserted

serted into the corolla: the antheræ are oblong and strait; the germen is roundish, the style is simple, and of the length of the stamina; the stigma is truncated; the fruit is a roundish drupe, having only one cell, the seeds are two, roundish, acuminated nuts, convex on one side, and plane on the other.

Of this genus there is only one known species.

STYRAX.

The Storax-tree.

The root is large and divided; the tree grows to twenty or thirty feet high; the bark is of a dusky brown, the young roots reddish: the leaves stand alternately; they are of a roundish figure, but pointed at the extremities, and somewhat resemble those of the quince; they are an inch and a half long, nearly as broad, and whitish underneath: the flowers stand five or six together; they are large, white, and fragrant: the fruit is fleshy, and of the size of a hazel nut.

The tree is a native of several parts of Europe, and of the East. In the latter part of the world it affords the fragrant resin, called *Styrax*, on wounding it's trunk, *C. Bauhine* calls it, *Styrax folio mali Cotonei*; others simply, *Styrax arbor*.

SAMYDA.

THE calyx of the *Samyda* is situated under the germen, and there is no corolla; these characters sufficiently distinguish it from all the other genera, without a farther description.

Class the Twelfth. Order the Second.

ICOSANDRIA DIGYNIA.

Plants which have hollow, monophyllous cups, with the corolla affixed by their unguis to the sides of them, and about twenty stamina inserted either into the corolla, or into the side of the cup, and which have in every flower two styles.

CRATÆGUS.

THE calyx is a permanent, concave, patent perianthium, composed of a single leaf, and divided into five segments: the corolla consists of five hollow, roundish, sessile petals, fixed to the cup: the stamina are twenty in number; they are of a subulate figure, and inserted into the cup: the antheræ are roundish; the germen is placed under the receptacle; the styles are two, filiform and erect: the stigmata are capitated: the fruit is a fleshy, roundish, umbilicated berry: the seeds are two, oblong, distinct, and cartilaginous.

1. *Cratægus foliis ovatis, repando-angulatis, serratis.* Virginia
The *Cratægus*, with oval, serrated, repando-angled leaves. Thorn.

The root is spreading; the tree grows to twenty feet high, and is ramose: the leaves are divided deep in many places, but are in the whole of an oval figure, or approaching to such; the flowers are moderately large and white: the fruit is of the size of a small nut, like the common haw in shape, but of a fine scarlet colour: the branches of the tree are armed with sharp and robust thorns.

It is a native of Virginia. *Plukenet* calls it, *Mespilus apii folio Virginiana fructu, amplo coccineo*.

2. *Cratægus foliis ovatis inæqualiter serratis.*
The Cratægus, with oval, unequally serrated leaves.

The Wild Service-tree.

The root is brachiated; the tree not very tall, but spreading, often assuming the form of a shrub: the trunk is covered with a brown bark; the young shoots with a dusky white one: the leaves are broad, and somewhat oval; the flowers are small, and of a greenish colour; the fruit is of a pear-fashioned shape, and esculent, but not very pleasant to the taste.

The tree is wild in the North of England. Ray calls it, *Sorbus Anglica sylvestris*.

The other species are, 1. The common white Thorn. 2. The oblong-leaved *Cratægus*. 3. The broad-leaved *Cratægus*. 4. The roundish-leaved *Cratægus*, or *Aria* of Theophrastus. 5. The long, serrated-leaved *Cratægus*, called the *Cotonafter*. 6. The arbutus-leaved *Cratægus*. 7. The lacinated-leaved *Cratægus*. 8. The great-leaved *Cratægus*, with robust spines.

Class the Twelfth. Order the Third.

ICOSANDRIA TRIGYNIA.

Plants which have hollow, monophyllous cups, with the petals affixed by their ungues to the sides of them, and have about twenty stamina inserted either into the corolla, or into the sides of the cup, and in every flower three styles.

SORBUS.

THE calyx is a permanent, concavo-patent perianthium, formed of a single leaf, divided into five segments: the corolla consists of five hollow, roundish petals, inserted into the calyx; the stamina are twenty subulated filaments, inserted into the calyx: the anthers are roundish; the germen stands below the receptacle; the styles are three, filiform and erect; the stigmata are capitated; the fruit is a soft, globose, umbilicated berry; the seeds are three, oblong, distinct, and cartilaginous.

1. *Sorbus foliis pinnatis, glabris.*
The pinnated, smooth-leaved Sorbus.

The Quicken-tree.

The root is very long and divaricated; the tree grows to thirty feet high; its trunk is strait and even; its branches numerous: the leaves are pinnated and large; the pinnae are smooth, of an oblong figure, serrated at the edges, and whitish underneath: the flowers are white, moderately large, and stand in umbels: the fruit is moderately large, and of a fine bright red, with an admixture of yellow in it.

It is a native of many parts of England. J. Bauhine calls it, *Sorbus aucuparia*; C. Bauhine, *Sorbus sylvestris foliis domesticæ similis*.

2. *Sorbus foliis pinnatis incanis.*
The Sorbus, with pinnated, hoary leaves.

The true Service-tree.

The root is simple and perpendicular; the tree is large; its branches numerous and long; the leaves are pinnated, each consisting of eight or nine pairs of pinnae, of an inch in length, and half an inch in breadth, standing on long pedicles, hairy and serrated at the edges: the flowers are white, and stand in umbels: the fruit is large, oblong, turbinate, and fleshy.

It is common, wild, in Italy and Germany. C. Bauhine calls it, *Sorbus fativa*; others, *Sorbus legitima*.

The other species are, 1. The oval-fruited *Sorbus*. 2. The small-fruited *Sorbus*.

Class

Class the Twelfth. Order the Fourth.

ICOSANDRIA TETRAGYNIA.

Plants with hollow, monophyllous cups, with the petals affixed by their unguis to the sides of them, with about twenty stamina inserted either into the corolla, or the sides of the cup, and with four styles.

TETRAGONIA.

THE calyx is a permanent perianthium, formed of four oval, deflexo-plane, coloured petals, revolute at the edge, and standing on the germen: there is no corolla: the stamina are twenty capillary filaments, shorter than the cup; the antheræ are oblong and incumbent: the germen is roundish, quadrangular, and placed under the receptacle; the styles are four, subulated, crooked, and of the length of the stamina: the stigmata are longitudinal and hoary: the fruit is a coriaceous crust, formed into a kind of square figure, by four longitudinal ake: the opposite angles narrower; the seed is single, osseous, and contains four cells: the nuclei are oblong; four is the proper and natural number of the styles in the flower, but only two are sometimes visible.

Of this genus there is only one known species, which is sufficiently distinguished by these characters.

Class the Twelfth. Order the Fifth.

ICOSANDRIA PENTAGYNIA.

Plants which have monophyllous, hollow cups, with corolla affixed by their unguis to the sides of them, with about twenty stamina inserted into the corolla or the cup, and with five styles.

AIZOON.

THE calyx is a permanent perianthium, formed of a single leaf, divided into five lanceolated segments; there is no corolla: the stamina are numerous, capillary filaments, inserted in several series into the sinus of the cup, and not equally distributed by the receptacle: the antheræ are simple; the germen is pentagonal; the styles are five, and simple; the stigmata are simple: the fruit is a ventricose capsule, of a pentagonal figure, and formed of five cells: the seeds are numerous and roundish; the stamina are in general placed three in a divisure of the calyx.

This genus comprehends the Ficoidea of Nissole.

MESEMBRYANTHEMUM.

THE calyx is a permanent perianthium, divided into five acute, patent, short segments: the corolla consists of a multitude of petals, of a lanceolated figure, narrow, formed into several series a little longer than the cup, and cohering just at the base by their unguis: the stamina are numerous, capillary filaments, of the length of the cup; the antheræ are incumbent: the germen stands below the receptacle, and is coronated, with five obtuse angles: the styles are five, usually subulated, and erecto-reflex; the stigmata are simple: the fruit is a fleshy, roundish capsule, with a radiated umbilicus, and with a number of cells equal to that of the styles: the seeds are numerous and roundish.

This genus comprehends the Ficoides of Tournefort. The number of the styles is sometimes ten; sometimes they, and the segments of the calyx, are only four.

1. *Mesembryanthemum vesiculis bispidum, foliis alternis ovatis obtusis undulatis.*

The blisfery; alternate, oval, obtuse, and undulated-leaved *Mesembryanthemum.*

The Ice Plant.

The root is fibrose and white; the stalk is round, succulent, variously divaricated, and of a pale green; the leaves are short, obtuse, undulated, and succulent: these and the stalks are beautifully spangled, with vesicles containing a clear fluid, and much resembling little pieces of ice: the flowers are numerous, small, and red.

It is a native of Africa, but is common in our stoves. Dillenius calls it, *Mesembryanthemum crystallinum Plantaginis folio undulato.*

2. *Mesembryanthemum foliis alternis teretibus obtusis.*

The alternate, cylindric, and obtuse-leaved *Mesembryanthemum.*

Flowering Kali.

The root is oblong, slender, yellowish, and furnished with a few fibres; from the head of this rise two thick, fleshy, broad leaves, which lie flat on the ground, or are but little raised from it. From the center of these rise two others of a finger's length, somewhat furrowed and roundish, and thick at the ends: from these rise several more pairs of the like leaves, and at length the stalks; these are slender, rounded, and procumbent, or but little erect: the leaves stand alternately on them, and are rounded or cylindric, and obtuse at the points: the flowers stand in the axils of these, on thick pedicles; they are white; the anthers yellow.

It is a native of Egypt, and of some of the southern parts of Europe; it grows on the sea-shores. C. Bauhine calls it, *Kali crassula minoris folio*; Columna, *Kali Neapolitanum Aizoides.*

The other species are very numerous; the more singular and distinct are, 1. The cylindric-leaved, cape *Mesembryanthemum.* 2. The tripodium-leaved, silvery-flowered *Mesembryanthemum.* 3. The five-leaved, procumbent, scarlet-flowered *Mesembryanthemum.* 4. The yellow-flowered, conjugate, linguiform-leaved *Mesembryanthemum.* 5. The smooth, arcuated-leaved *Mesembryanthemum.* 6. The cord-leaved *Mesembryanthemum.* 7. The purple, triangular, acute-leaved *Mesembryanthemum.* 8. The long, triquetrous-leaved, yellow-flowered *Mesembryanthemum.* 9. The thick and scarlet *Mesembryanthemum.*

MESPILUS.

THE calyx is a permanent perianthium, formed of a single leaf, concavo-patent, and divided into five segments: the corolla consists of five roundish, hollow petals, inserted into the calyx: the stamina are twenty subulated filaments, inserted into the calyx; the anthers are simple, the germen stands under the receptacle: the styles are five, simple and erect; the stigmata are capitated: the fruit is a globose, umbilicated berry, crowned with a connivent cup, but with the umbilicus almost perforated: the seeds are five; they are *osseous* and gibbous.

1. *Mespilus foliis lanceolatis integerrimis subtus tomentosis, calycibus acuminatis.*

The lanceolated, undivided-leaved *Mespilus*, with acuminate cups.

The Common Medlar.

The root is large and brachiated; the tree grows to no great height, but is ramose; the leaves are oblong, pointed at the ends, somewhat hairy on the upper surface, and more so underneath: the flowers stand singly; they are large and white: the fruit is large, and of a brown colour.

It is a native of Germany, and is common in our gardens. C. Bauhine calls it, *Mespilus Germanica folio laurino, non serrato, five Mespilus vulgaris.*

The other species of this genus are, 1. The lacinated-leaved *Mespilus.* 2. The pear-

pear-leaved Virginian Mespilus. 3. The almond-leaved, prickly Mespilus. 4. The trilobate-leaved Mespilus. 5. The rounder-leaved Mespilus.

PYRUS.

THE calyx is a permanent perianthium, composed of a single leaf, hollow, and divided into five patent segments: the corolla consists of five large, roundish, hollow petals, inserted into the calyx: the stamina are twenty subulated filaments, inserted into the calyx, and shorter than the corolla: the antheræ are simple; the germen stands under the receptacle; the styles are five, filiform, and of the length of the stamina; the stigmata are simple; the fruit is an umbelicated apple of a figure, approaching to round, fleshy, and containing five cells, formed by membranes: the seeds are oblong, obtuse, acuminate at the base, convex on one side, and plane on the other.

This genus comprehends the *Pyrus*, the *Malus*, and the *Cydonia* of authors: all the kinds of pear, the apple, and the quince. It is wonderful, that authors have not attended to the perfect similarity of the characters in all these. They have, for want of a due precision, raised varieties into species, and species into genera.

1. *Pyrus foliis serratis, pomis basi productis.*

The *Pyrus*, with serrated leaves, and lengthened fruit.

The Pear-tree.

The root is long and thick; the trunk large; the tree considerably high, and its branches naturally erect: the leaves are placed alternately; they are roundish, or somewhat oblong, thick, and have long pedicles: the flowers are large and white; the fruit is naturally roundish, but lengthened at the base.

It is a native of Germany; our gardens afford infinite varieties of it from culture. Authors call it, *Pyrus sativa* Bergamotta, and *Bona Christiana*.

2. *Pyrus foliis serratis, pomis basi concavis.*

The serrated-leaved *Pyrus*, with fruit hollowed at the base.

The Apple-tree.

The root is spreading; the trunk thick; the tree low, and the branches usually horizontal or oblique: the leaves are large, roundish, but pointed at the end, serrated and whitish underneath: the flowers are large and white, or reddish: the fruit roundish, and not lengthened, but hollowed, at the base.

It is a native of all Europe; we have infinite variety of the fruit in our gardens, owing solely to culture. The crab is the origin of all.

3. *Pyrus foliis integerrimis subrotundis subtus incanis.*

The *Pyrus*, with roundish, undivided leaves, hoary underneath.

The Quince-tree.

The root is divided and spreading; the tree is low, and the bark brownish; the leaves are large, roundish, of a deep green, often covered with a downy, loose matter entirely, always hoary underneath: the flowers stand singly, and are large, beautiful, and of a pale flesh colour: the fruit is large, lengthened at the base, and coronated with a long cup at the summit.

It is a native of Germany. All the botanical writers call it, *Malus Cydonia* and *Cotonea*. The authors, who have wrote on gardening, have made an almost infinite number of imaginary species, from the varieties of these three; but it is not the business of botanical writers to meddle with them.

SPIRÆA.

THE calyx is a permanent perianthium, formed of a single leaf, plane at the base, and lightly divided into five acute segments: the corolla consists of five roundish, plane petals, inserted into the calyx; the stamina are twenty subulated filaments, inserted into the calyx, and shorter than the corolla: the antheræ are roundish; the germen

germina are five, oval and slender; the styles are five, filiform, and of the length of the stamina; the stigmata are capitated: the fruit consists of five oblong, compressed, acuminate capsules, each formed of two valves: the seeds are few, acuminate and small. There is a species with but three styles.

1. *Spiræa foliis obtusis lanceolatis serratis, floribus duplicato-racemosis.*

The duplicato-racemose flowered Spiræa, with obtuse, lanceolated, serrated leaves. **Spiræa.**

The root is branched and spreading; the shrub rises to four feet high; the branches are slender and reddish: the leaves stand irregularly; they are long, narrow, obtuse, and serrated round the edges: the flowers are small, and of a pale red; they stand in a kind of thick spikes, of four inches long.

It is a native of Siberia and Tartary; it is common in our gardens. C. Bauhine calls it, *Frutex spicatus foliis salignis serratis*.

2. *Spiræa foliis integerrimis, umbellis sessilibus.*
The undivided-leaved Spiræa, with sessile umbels.

White shrubby hypericum.

The root is small, but branched; the shrub grows to three feet high; the branches are slender and tough; the bark of a deep brown; the leaves stand closely and irregularly; they are small, and of a dark green: the flowers are of a beautiful white, and stand in a kind of little umbels, at the extremities of the branches on simple pedicles.

It is a native of America, but is common in our gardens. C. Bauhine calls it, *Prunus sylvestris affinis Canadensis*. Jonquet, *Hypericum frutescens Americanum flore albo*.

The other species of *Spiræa* are, 1. The broader-leaved *Spiræa*. 2. The crenate-leaved, umbellated *Spiræa*.

FILIPENDULA.

THE calyx is a small, deciduous perianthium; formed of a single leaf, divided into five reflexo-patent segments: the corolla consists of five, or more, petals, inserted into the calyx, oblong, obtuse, plane, and patent: the stamina are a number of capillary filaments, inserted into the calyx, and shorter than the corolla; the antheræ are simple: the germina are acuminate; they are usually five, sometimes more, and they terminate in so many short styles; the stigmata are capitated; there is no pericarpium, except the crusts of the seeds: the receptacle is globose; the seeds are oblong, acuminate, and disposed in a circular manner.

This genus comprehends the *Filipendula* and the *Ulmaria* of authors.

1. *Filipendula foliis pinnatis, foliolis uniformibus.*
The pinnated-leaved Filipendula, with uniform foliola.

Dioiswort.

The root is composed of a multitude of thick fibres, with large, roundish, or oval, tuberosities adhering to them; in many parts black on the surface, and white within: the leaves are long, pinnated, and serrated about the edges: the pinnæ are small, of a figure approaching to oval, and uniform: the stalk is usually single, striated, hollow, erect, and ramose: the leaves are placed alternately; the flowers stand in a kind of umbels at the top of the branches; they are small, sweet-scented, white, and full of yellow antheræ.

It is a native of Eoglod; it grows in damp places. C. Bauhine calls it, *Filipendula vulgaris*.

2. *Filipendula foliis pinnatis, folio impari trifido.*
The Filipendula, with pinnated leaves, and the odd
leaf trifid.

**Meadow
Sweet.**

The root is composed of a great number of thick, reddish fibres; the leaves are pinnated; the pinna broad, serrated, and scabrous, of a deep green on the upper surface, white underneath, and the leaf of which terminates the stalk or rib larger than the rest, and trifid: the stalks are erect, rigid, striated, and hollow: the flowers stand at their tops in a kind of umbels; they are white and sweet-scented.

The plant is common about waters. Authors have called it, *Barba capræ* and *Ulmaria*. C. Bauhine, *Barba capræ floribus compactis*.

The other species are, 1. The lacinated-leaved *Filipendula*. 2. The ternate-leaved *Filipendula*.

Class the Twelfth. Order the Sixth.

ICOSANDRIA POLYGYNIA.

Plants which have monophyllous, hollow cups, with the corolla affixed by their ungues to their sides, and have about twenty stamina inserted into the corolla, or into the cup, and numerous styles.

R O S A.

THE calyx is a perianthium composed of a single leaf, divided into five long, narrow, lanceolated segments, two of which alternately are appendiculated on each side, two others alternately naked, and the fifth appendiculated only on one side: the base is campanulato-globose: the corolla consists of five obversely cordated petals, of the length of the cup, and inserted into the calyx; the stamina are very numerous, and very short, capillary filaments, inserted into the neck of the calyx; the antheræ are trigonal; the germina are numerous, and placed in the bottom of the cup; the styles are of the same number; they are short, villose, and closely compressed against the neck of the calyx, and inserted into the sides of the germina; the stigmata are simple: the fruit is formed of the fleshy base of the cup; it is of a turbinated figure, coloured, soft, containing only one cell, drawn together at the neck, and coronated with some irregular laciniz: the seeds are numerous, oblong, and hairy. The peculiar formation of the calyx is more constant and certain in the wild, than in the cultivated, kinds.

1. *Rosa caule aculeato, petiolis inermibus, calycibus semipinnatis.*

The prickly-stemmed Rose, with unarmed pedicles to the leaves, and semipinnate cups.

**The Wild
Buar.**

The root is divaricated and spreading; the stem is three quarters of an inch in diameter, and grows to eight or ten feet high, but requires support: the leaves are beautifully pinnated; the pinnules oval and serrated; the flowers are single and large, of a white or pale red colour: the fruit is the common hip.

It is wild in our hedges, Authors call it, *Rosa sylvestris* and *Rosa canina*. All the variety of beautiful roses in our gardens are varieties of this species, principally owing to culture; the red, the damask, the yellow, the monthly, the variegated, the white Rose, the briar, and the like, are all produced from this original species. The flowers of the damask Rose are purgative, those of the red Rose astringent, and the fruit of the wild Rose pectoral. Preparations of them all are used in the shops.

2. *Rosa caule petiolisque aculeatis, calycibus indivisis.*
The Rose, with the stem and petioles both prickly, and with
undivided cups.

**The Bour-
net Rose.**

The root is divaricated. The trunk is robust, but low, very much branched, and very prickly. The leaves are pinnated; the pinnales are small, roundish, and of a dark green colour. The flowers are small and white; the fruit round.

It is a native of England. C. Bauhine calls it, *Rosa sylvestris pomifera minor*; J. Bauhine, *Rosa pumila spinosissima foliis pimpinelle glabris*.

The other genuine species of Rose are, 1. The prickly-fruited, wild Rose. 2. The great, apple Rose. 3. The large-leaved Rose. 4. The smooth Rose.

R U B U S.

THE calyx is a permanent perianthium, formed of a single leaf, divided into five oblong, lanceolated, patent segments: the corolla consists of five roundish petals, of the length of the cup, erecto-patent, and inserted into the cup: the stamina are numerous filaments, inserted into the cup, and shorter than the corolla: the anthers are roundish and compressed; the germina are numerous; the styles are capillary and small, and arise from the sides of the germina: the stigmata are simple and permanent: the fruit is a compound berry; the acini it is composed of are roundish, and arranged into a cluster, convex, concave below, and each acinus has only one cell: the seeds are single and oblong; the receptacle of the pericarpia is conic: the acini in most of the species grow together, so as to be inseparable without breaking.

1. *Rubus foliis quinato-digitatis ternatisque, caule petiolisque aculeatis.*

**Common
Bramble.**

The quinato-digitated and ternated-leaved Rubus, with the stem and petioles prickly.

The root is oblong, nodose, and creeping. The stem is angulated, spinose, six feet long, but too weak to stand erect. The leaves stand three or five on a pedicle; when five, they are not pinnated, but digitated; they are large, oblong, broad, scabrous, and whitish underneath. The flowers are large and white, or flesh-coloured; the fruit black, when ripe.

It is common in hedges throughout Europe. C. Bauhine and others call it, *Rubus vulgaris*, and *Rubus fructu nigro*.

2. *Rubus foliis quinato-pinnatis ternatisque, caule hispido.*
The hispid-stalked Rubus, with ternate and pinnated-quinate leaves.

**The Rasp-
berry Bush.**

The root is divaricated and spreading. The stem is round, slender, hispid; rather than prickly, especially while young, and of a reddish colour. The leaves are large, oblong, and hairy; they stand three or five on a pedicle, and, when five, they are not digitated, as in the Bramble, but pinnated: the pedicles are about two inches long, and smooth. The flowers are white; the fruit red, tender, and succulent.

It is a native of most parts of Europe. C. Bauhine calls it, *Rubus idæus spinosus*; others, *Rubus idæus*.

It's fruit is cooling and subacid; an agreeable syrup is made of it's juice.

The other species of Rubus are, 1. The small, ternate-leaved, blue-fruited Rubus. 2. The herbaceous-stalked Rubus, called the Stone Bramble, and *Chamaerubus*. 3. The ternate-leaved Rubus, with only one flower on the stalk. 4. The simple-leaved Rubus, with only one flower on the stalk, called the *Chamaemorus*. 5. The hoary Rubus.

FRAGARIA.

FRAGARIA.

THE calyx is a plane perianthium, composed of a single leaf, lightly divided into ten segments, alternately exterior and narrow: the corolla consists of five roundish, patent petals, inserted into the calyx: the stamina are twenty subulated filaments, shorter than the corolla, and inserted into the calyx: the antheræ are lunular; the germina are numerous, very small, and collected into a head: the styles are simple, and inserted into the sides of the germina: the stigmata are simple: there is properly no pericarpium: the common receptacle of the seed is of a roundish, oval figure, plane at the base, and pulpose, large, soft, and deciduous: the seeds are numerous, very small, acuminate, scattered over the superficies of the receptacle, and not deciduous.

Fragaria flagellis reptans.

The Fragaria, with creeping tendrils.

The Strawberry Plant.

The root is long, reddish, and fibrated. The tendrils, or flagellæ, are round, knotty, and smooth; they run every way from the head of the root, and themselves take root at the joints. The leaves are large, oblong, broad, serrated, and whitish underneath; they stand three on each pedicle: the pedicles are four or five inches long. The stalk is round, hairy, and short, ramose at the top, and furnished with six or eight large, white flowers. The fruit is red, sweet, and large.

It is a native of our woods. C. Bauhine calls it, *Fragaria vulgaris*. Culture alters it so much, as to have given rise, by the varieties, to several imaginary species. The fruit is also very subject to variation; on the wild plant it is, in some places, very large, in some white, in some irregularly figured.

The other really distinct species are, 1. The scarlet, Virginian *Fragaria*. 2. The arborescent *Fragaria*, with green flowers. 3. The broader-leaved, deeply-serrated *Fragaria*, without tendrils.

POTENTILLA.

THE calyx is a perianthium, formed of a single leaf, plane, lightly divided into ten segments, alternately smaller, and reflex: the corolla consists of five roundish, patent petals, inserted by their ungues into the calyx: the stamina are twenty subulated filaments, shorter than the corolla, and inserted into the calyx: the antheræ are oblong and lunulated: the germina are numerous, very small, and collected into a head: the styles are filiform, of the length of the stamina, and inserted into the sides of the germina: the stigmata are obtuse: there is no pericarpium: the receptacle of the seeds is roundish, small, and permanent, and is covered by the cup, and surrounded with the seeds, which are numerous and acuminate.

This genus comprehends the *Quinquifolium* and the *Pentaphylloides* of Tournefort, &c.

1. *Potentilla foliis pinnatis, caule repente.* **Silver-Weed, or Wild Ransey.**
The pinnated-leaved Potentilla, with a creeping stalk.

The root is short, reddish, and furnished with a multitude of fibres. The stalks are procumbent, and take root at their knots, or joints. The leaves are long, pinnated, and of a pale green colour on the upper side, and a silvery-white underneath; they are composed of about eight pairs of pinnae, which are oblong, narrow, and serrated at the edges. The flowers stand on short pedicles, and are of a beautiful yellow colour, and large.

It is common by way-sides. C. Bauhine calls it, *Potentilla*; others, *Argentina* and *Pentaphylloides alatum*.

2. *Potentilla*

2. *Potentilla foliis digitatis, caule repente, pedunculis unifloris.*

The *Potentilla*, with digitated leaves, creeping stalks, and single flowers.

Common
Cinquefoil.

The root is oblong, thick, and woody. The stalks are round, slender, and procumbent; they take root at their joints, and spread every way to two or three feet in length. The leaves stand five, or more, on each pedicle; they are of a dusky green colour, oblong, and serrated at the edges. The flowers stand singly, on long pedicles, and are large and yellow.

It is common by way-fides. C. Bauhine calls it, *Quinquefolium majus repens*; others, *Quinquefolium vulgare*. It's root is astringent.

The other species are, 1. The shrubby *Potentilla*. 2. The silver-leaved, erect *Potentilla*. 3. The little, gold-yellow-flowered, Alpine *Potentilla*. 4. The ternate-leaved, erect, hairy *Potentilla*. 5. The white-flowered *Potentilla*, with leaves cut in at the ends. 6. The smaller-leaved, white *Potentilla*. 7. The woolly *Potentilla*. 8. The low, Canada *Potentilla*. 9. The strawberry Cinquefoil. 10. The procumbent, short-leaved *Potentilla*. 11. The ternate-leaved, ramose *Potentilla*.

TORMENTILLA.

THE calyx is a plane perianthium, composed of a single leaf, lightly divided into eight acute segments, alternately smaller: the corolla consists of four obversely cordated, plane petals, inserted by their unguis into the calyx: the stamina are sixteen subulated filaments, of half the length of the corolla, and inserted into the calyx: the antheræ are simple; the germina are eight; they are small, and form a kind of head: the styles are of the length of the stamina; they are inserted into the sides of the germina, and the stigmata are obtuse: the receptacle of the seeds is very small; it is covered with seeds, and surrounded by the cup: the seeds are eight, oblong, and acuminate obtusely.

Linnaeus has, in his late writings, joined this genus with the *Potentilla*. The difference is principally in the number of the parts, but it is sufficient.

There is only one species of it.

TORMENTILLA.

The root is tuberous, and furnished with a number of fibres. The stalks are slender, hairy, reddish, round, a foot long, and scarce able to support themselves erect. The leaves are oblong, narrow, and serrated, and stand seven together, at every joint of the stalk. The flowers are small, but of a beautiful yellow colour.

It is common on heaths. C. Bauhine calls it, *Tormentilla sylvestris*; others, *Tormentilla vulgaris*. It's root is a very good astringent.

COMARUM.

THE calyx is a large, coloured, permanent perianthium, composed of a single leaf, lightly divided into ten patent segments, alternately smaller, and inferior: the corolla consists of five oblong, acuminate petals, scarce a third part so large as the calyx, into which they are inserted: the stamina are twenty subulated filaments, inserted into the cup, of the length of the corolla, and permanent: the antheræ are lunular and deciduous: the germina are numerous, roundish, and very small; they are collected into a head: the styles are simple, short, and inserted into the sides of the germina: the stigmata are simple: there is no pericarpium: the common receptacle of the seeds is of the figure of a scrotum, very large, fleshy, and permanent: the seeds are numerous, acuminate, and they cover the receptacle.

Of this genus there is only one known species.

COMARUM.

COMARUM.

The root is long, creeping, and blackish. The leaves are pinnated; there are usually five or seven of the pinnæ on the same pedicle, arranged in pairs, with an odd one at the extremity; they are oblong, broad, serrated, and of a pale bluish-green colour. The stalks are round, smooth, in part procumbent, but often rising a foot and a half, or more, erect; the leaves stand alternately on them. At the tops of the branches stand the flowers, which are purple, as is also the inside of the calyx.

It is a native of the north of England. C. Bauhine calls it, *Quinquefolium palustre rubrum*; others, *Pentaphyllum flore rubro*.

GEUM.

THE calyx is a perianthium, composed of a single leaf, divided into ten somewhat erect segments, alternately very small and acute: the corolla consists of five petals, of a roundish figure, with narrow ungues, of the length of the calyx, and inserted into it: the stamina are numerous, subulate filaments, of the length of the cup, and inserted into it: the anthers are short, broad, and obtuse: the germina are numerous, and are collected into a head: the styles are long, thready, and inserted into the sides of the germina: the stigmata are simple: there is no pericarpium: the common receptacle of the seeds is oblong, hairy, and placed on the cup, which is, at that time, reflex: the seeds are numerous, compressed, hispid, and each furnished with a long, geniculated style.

This genus comprehends the *Caryophyllata* of Tournefort and others.

1. *Geum floribus erectis, fructu globofo, seminum cauda uncinata nuda.*

The erect-flowered *Geum*, with a globose fruit, and the tails of the seeds naked and uncinated.

Common
Abens.

The root is short, thick, tuberous, oblique, and furnished with fibres, of a reddish colour within, and of an aromatic smell. The leaves are pinnated and large; the pinnæ roundish, and the odd leaf, at the end, much largest, and divided into three segments: the stalk is erect, slender, a foot, or more, high; the leaves stand alternately on it. The flowers stand at the tops of the branches; they are erect, yellow, and moderately large. The fruit is a roundish, erect, hairy body, of the bigness of a small nut.

It is common by way-sides. C. Bauhine calls it, *Caryophyllata vulgaris*; Gesner, *Geum urbanum*.

2. *Geum floribus nutantibus, fructu oblongo, seminum cauda molli plumosa.*

The nutant-flowered *Geum*, with oblong fruit, and plumose tails to the seeds.

Purple marsh
Abens.

The root is oblong and creeping. The leaves are pinnated, of a dark green colour, and somewhat hairy; the pinnæ are roundish, the terminatory leaf broad, and divided into three lobes. The stalks are numerous, round, hairy, and often reddish, a foot, or more, in height; the flowers stand alternately on them; they are placed on short, reddish, hairy, bending pedicles; they are of a purple colour on the outside, and of a pale red within, scarce appearing beyond the edge of the cup, and always hanging down. The fruit is oblong, and the tails of the seeds are beautifully plumose.

It is a native of the north of England. C. Bauhine calls it, *Caryophyllata aquatica nutante flore*; Gesner, *Geum rivale*.

The other species are, 1. The ground ivy-leaved *Geum*. 2. The white-flowered, large-leaved, Virginian *Geum*. 3. The little, nutant-flowered *Geum*. 4. The great, yellow-flowered, Alpine *Geum*. 5. The divided-leaved, Alpine *Geum*. 6. The digitated-leaved, Alpine *Geum*.

D R Y A S.

THE calyx is a perianthium, formed of a single leaf, divided into eight patent, linear, obtuse segments, equal in size, and a little shorter than the corolla: the corolla consists of eight oblong, emarginated, patent petals, inserted into the calyx: the stamina are numerous, short, capillary filaments, inserted into the calyx: the anthers are small: the germina are small, numerous, and formed into a cluster: the styles are capillary, and inserted into their sides: the stigmata are simple: there is no pericarpium: the seeds are numerous, roundish, compressed, and furnished with extremely long and lanigerous styles.

The only known species of this genus has been confounded by most authors with the Caryophyllata.

D R Y A S.

The root is long, thick, woody, creeping, and of a reddish-black colour. The stalks are round, woody, diffuse, and procumbent; they grow to six or eight inches long; they are reddish. The leaves stand alternately, and are simple, oblong, serrated, rugose, and hoary underneath; they are of a dusky green colour on the surface. The flowers are large and white; they stand singly on long, hairy pedicels.

It is a native of Sweden and Lapland. C. Bauhine calls it, *Chamaedrys Alpina cisti flore*; Ray, *Caryophyllata Alpina chamaedrys folio*.

Class the Thirteenth.

P O L Y A N D R I A.

Plants which have in every flower very numerous stamina.

OF the Polyandria some have only one style, some have two, some three, some four, some five, some six, and, finally, some very numerous, styles. The genera of this class will, therefore, be arranged, according to this distinction, into seven orders.

Order the First.

P O L Y A N D R I A M O N O G Y N I A.

Plants which have numerous stamina and only a single style in the flower.

OF these some have the style scarce visible, others have it very long: the genera of each kind are numerous, and it will be convenient to arrange them in two divisions, according to this obvious distinction.

Class the Thirteenth. Order the First.

Division the First.

Polyandria Monogynia, with the style scarce visible.

M A R C G R A V I A.

THE calyx is a perianthium, composed of six squamæ, disposed in pairs oppositely, and the inferior ones the smaller: the corolla consists of a single petal; it is of a conico-oval figure, and entire, and is every-where short, and separates from the parts of fructification at it's base: the stamina are numerous, short; subulated filaments, deciduous, as the corolla, and patent: the anthers are large, of an oblong oval figure, and erect: the germen is oval; there is no style; the stigma is obsolete: the fruit is a globose berry, with a single cell: the seeds are numerous, nidulant, and very small.

The

The flowers in this genus form a kind of umbel, and, in the middle of it, there stand certain large sessile bodies, of a strange figure; they are formed each of a single leaf, and are clavated, ringent, hollow in their lower part, and open at the base; they have ten acute, prominent lobes before, and much resemble the upper part of the asconite flower; these have usually been called flowers, but they are not so; they are only excretory vessels, or glands.

MORISONA.

THE calyx is a fading perianthium, formed of a single leaf, ventricose, lightly divided into two parts, patent at the mouth, dentated at the neck, and obtuse: the corolla consists of four oblong, obtuse petals, patent beyond the cup: the stamina are numerous filaments: the antheræ are simple: the germen is oval; the style is simple; the stigma is capitated, and plano-convex: the fruit is a globose berry, with a hard, smooth rind, supported on the style, and containing only one cell: the seeds are numerous, reniform, and nidulant.

It is an American, described by Plumier, 23.

BREYNIA.

THE calyx is a very small perianthium, composed of a single leaf, deciduous, and divided into four oval, ciliateous, patent segments: the corolla consists of four oval, patent petals, and is somewhat larger than the cup: the stamina are very numerous, capillary filaments, longer than the corolla: the antheræ are erect and oblong: the germen is very long, very slender, clavated, and obtuse: the style is scarce visible; the stigma is obtuse: the fruit is a very long, fleshy, clavated, soft pod, formed of two valves, and containing only one cell: the seeds are numerous, kidney-shaped, fleshy, and arranged longitudinally in the pod.

It is an American, described by Plumier, 16.

CRATEVA.

THE calyx is a deciduous perianthium, formed of a single leaf, plane at the base, and lightly divided into four patent, oval segments: the corolla consists of four oval petals, bent upwards toward the same side, and furnished with narrow unguis, of the length of the cup: the stamina are about sixteen setaceous filaments, shorter than the corolla, and placed in a declinatory posture, opposite to the petals: the antheræ are erect and oblong: the germen is of an oval figure, and is supported on a very long filament: the stigma is sessile and capitated: the fruit is a very large, globose, fleshy berry, containing one cell, and standing on a thick stylus: the seeds are numerous, roundish, emarginated, and nidulatory.

This genus comprehends the Tapia of Plumier.

CAPPARIS.

THE calyx is a perianthium, composed of four oval, hollow, and gibbous leaves: the corolla consists of four very large, patent, roundish, emarginated petals: the stamina are numerous, filiform capillaments, of the length of the corolla: the antheræ are simple; the germen is oval, and is supported on a stylus of the length of the stamina: the stigma is obtuse and sessile: the fruit is a fleshy, turbinate capsule, with a single cell: the seeds are numerous, kidney-shaped, and nidulatory.

1. *Capparis caudice spinosa, foliis subrotundis.* The Capers
The roundish-leaved, prickly Capparis. Shrub.

The root is long, divaricated, and spreading; the stems are numerous, three quarters of an inch thick, or more, and armed with sharp, robust, and crooked spines, like those of the bramble. The leaves stand alternately, and are of a roundish figure, sometimes oblong and pointed; they are about two inches broad. The flowers stand singly,

finely, on moderately long pedicles, arising from the axis of the leaves; they are large, white, and beautiful.

It is a native of Italy. C. Bauhine calls it, *Capparis spinosa*, fructu minore, folio rotundo; others, only *Capparis*. The buds make the pickled Capers, used in our sauces.

The other species are, 1. The acute-leaved *Capparis*, with double spines. 2. The large-fruited *Capparis*, without spines. 3. The bay-leaved, arborefcnt *Capparis* of America.

C A M B O G I A.

THE calyx is composed of four leaves; the corolla consists of four petals; the fruit is an apple, containing eight cells.

1. *Cambogia fructu sulcato.*

The Cambogia, with a sulcated fruit.

The root is very large, divaricated, and spreading; the tree very large, tall, and ramose; it's trunk often three feet in diameter. The leaves stand in pairs, and have short pedicles; they are thick, firm, and of an ovato-lanceolate figure. The flowers stand in clusters, at the extremities of the branches; they have short pedicles, and are of a pale red, sometimes of a yellow, colour. The fruit is of the bigness of an orange, roundish; but marked deeply with eight or nine furrows, with high ridges between them; it has a little kind of head at it's top, and is, at first, green, afterwards yellow, and, when ripe, white.

It is a native of the East Indies. Acofta calls it, *Carea pulli*; Van Rheede, *Caddam pulli*; Herman, *Ghoraka*.

2. *Cambogia fructu glabra.*

The smooth-fruited Cambogia.

The root is large and spreading; the tree grows to sixty feet high. The leaves stand in pairs, and are of a lanceolated figure. The flowers stand on short pedicles, in little clusters, at the tops of the branches. The fruit is of the bigness of a nutmeg, and is of a reddish-yellow, when ripe, which is also the colour of the flowers.

It is a native of Ceylon and Malabar. Herman calls it, *Kanna ghoraka*.

Both these trees, on wounding their bark, afford the *Gambogium* of the shops, a violent cathartic.

A C T E A.

THE calyx is a spathaceous perianthium, composed of four roundish, obtuse, hollow, deciduous leaves: the corolla consists of four deciduous petals, larger than the calyx, and of a quadrangulari-acuminated figure at each end; the stamina are about thirty capillary filaments, broadest at the top; the anthers are roundish, didymous, and erect: the germen is oval; there is no style: the stigma is thick, and obliquely depressed: the fruit is a smooth, unilocular berry, of a figure approaching to oval, and with one furrow: the seeds are numerous, semicircular, truncated, and arranged in a double series.

This genus comprehends the *Christophoriana* of authors; there is but one known species of it.

A C T E A.

The root is oblong, thick, black without, yellowish within, and furnished with numerous fibres. The stalk is round, slender, striated, jointed, and about two feet high. The leaves are large; they stand in a ternate order, on pedicles, which divide again into three parts, and, finally, the leaves are sometimes so divided as to seem each composed of three others; they are oblong, of a deep green colour, serrated at the edges, and the terminatory leaf is usually divided at least into three lobes: the flowers are small, white, and stand in clusters: the berries are small and black.

It is a native of moist parts of Europe, in woods. C. Bauhine calls it, *Aconitum racemosum*; other authors, in general, *Christophoriana*. It varies in the colour of the berries; they are sometimes white, sometimes reddish; it is esteemed poisonous.

BOCCONIA.

BOCCONIA.

THE calyx is a deciduous, oval, obtuse, hollow spatha, composed of two leaves: the corolla consists of four very narrow petals: the stamina are usually twelve very short filaments: the antheræ are erect, and of the length of the cup: the germen is large, roundish, and contracted on each side: the style is simple, and slightly bifid: the stigmata are simple; the fruit is of an oval figure, but contracted on each side, long, compressed, containing only one cell, and filled with pulp: the seed is single and globose.

It is an American, described by Plumier, 25.

MUNTINGIA.

THE calyx is a perianthium, formed of a single leaf, hollowed at the base, and divided into five large, permanent, and lanceolato-acute segments: the corolla consists of five roundish petals, of the length of the cup; they are patent, and are inserted into the cup: the stamina are numerous, capillary, and very short filaments: the antheræ are simple; the germen is globose and hairy; there is no style; the stigma is capitated and pentagonal: the fruit is a round, unilocular berry, umbilicated with the stigma: the seeds are numerous, roundish, and small.

It is an American, described by Plumier, 6.

CHELIDONIUM.

THE calyx is a roundish spatha, composed of two oval, concave, obtuse, deciduous leaves: the corolla consists of four roundish, plane, patent petals, large, and narrow at the base: the stamina are numerous, plane filaments, about thirty, broadest at the top, and shorter than the corolla: the antheræ are oblong, compressed, erect, obtuse, and didymous: the germen is cylindric, and of the length of the stamina: there is no style; the stigma is capitated and bifid: the fruit is a cylindric pod, formed of two valves, and containing only one cell: the seeds are numerous, oval, and smooth: the receptacle is linear between the valves, in form of a future, and not opening.

This genus comprehends the *Cbelidonium* and the *Glaucium* of Tournefort.

Cbelidonium glabrum pedunculis unifloris.

The smooth *Cbelidonium*, with flowers, one on a peduncle.

Yellow, horned
Poppy.

The root is long, robust, and white. The plant grows to two feet high, and is robust and branched. The stalks are round, of a pale greyish-green colour; the leaves are large, laciniated at their edges, and of a bluish-green. The flowers stand on single pedicles, at the tops of the stalks; they are very large, and of a beautiful yellow colour.

It is a native of our sea-coasts: Tournefort calls it, *Glaucium flore luteo*.

The other species are, 1. The rough-leaved, purple-flowered *Celandine*; this is also called a horned Poppy. 2. The great *Celandine*, with the leaves finely divided. 3. The common, great *Cbelidonium*.

PAPAYER.

THE calyx is an oval, emarginated spatha, composed of two oval, hollow, deciduous leaves: the corolla consists of four large, roundish, plane, patent petals, narrowest at the base, and alternately smaller: the stamina are numerous, capillary filaments, much shorter than the corolla: the antheræ are compressed, oblong, erect, and obtuse: the germen is roundish and large: there is no style; the stigma is peltated, plane, and radiated: the fruit is a capsule, containing one cell, coronated with a large, plane stigma, and opening with several foramina under it: the seeds are numerous and very small; the receptacles are longitudinal plicæ, of the same number with the rays of the stigmata; they grow to the sides of the fruit, or capsule.

Papaver caule multifloro, foliis simplicibus glabris.

The simple, smooth-leaved Papaver, with many flowers on the stalks.

Garden Poppy.

The root is fibrous and white. The plant rises to four feet high. The stalk is robust and erect, round, of a greyish-green, and smooth. The leaves are four or five inches long, two and a half broad, smooth, lacinated at their edges, and of a bluish-green colour. The flowers stand at the tops of the branches, and are very large, of a whitish colour, but black toward the bottom. The fruit, which succeeds these, is the common Poppy-head of the shops.

It is a native of most parts of Europe, and is cultivated every-where in gardens. C. Bauhine calls it, *Papaver hortense semine albo*; others, *Papaver album sativum*.

There are four varieties of this plant described as separate species by authors: 1. The black-seeded Poppy. 2. The fimbriated, or cristated, Poppy of C. Bauhine, with the flowers and seeds white. 3. The cristated Poppy, with red flowers and black seeds; and, 4. The double-flowered, white Poppy. The old authors have recounted these as distinct species: our gardeners have of late multiplied the varieties of the double Poppies to an amazing number, and some have also added these to the number of species.

The truly distinct species of Papaver, beside the common one, are, 1. The purple-flowered, horned Poppy, commonly called a Glaucium; of this also there are two varieties, called distinct species, the longer and shorter headed Argemone. 2. The great-flowered, very hairy, oriental Poppy. 3. The yellow, sweet-flowered Poppy, with naked stalks. 4. The common field Poppy; the varieties of which, with large and with double flowers, have also been called distinct species. 5. The hoary-seeded Poppy. 6. The smaller, many-flowered Poppy. 7. The undivided-leaved, corn Poppy. 8. The yellow Poppy. 9. The coriander-leaved Poppy. 10. The hypocum-leaved, oriental Poppy.

All the Poppies have a narcotic quality; the opium of the shops is the produce of the first species in Turkey, with us the syrup of diacodium is made of the heads.

ARGEMONE.

THE calyx is a roundish spathe, composed of three hollow, pointed, deciduous leaves: the corolla consists of five roundish, erecto-patent petals, larger than the cup: the stamina are numerous, filiform, and of the length of the cup: the antheræ are oblong and erect: the germen is oval and pentangular: there is no style: the stigma is thick, obtuse and reflex, divided into five parts, and permanent: the fruit is an oval, pentangular capsule, containing one cell, and seeming as if formed of five valves: the seeds are numerous, and very small: the receptacles are linear, and grow to the angles of the pericarpium; they do not burst.

This genus is nearly allied to the papaver; there is but one known species of it.

ARGEMONE.

The root is fibrous. The plant grows to a foot high. The stalk is round, thick, and prickly. The leaves are oblong, jagged, and prickly at the edges, and of a pale green colour, variegated with lines and streaks of white. The flowers are large and yellow, and grow in the axils of the leaves.

It is a native of Mexico, and of some of the Caribbee islands. C. Bauhine calls it, *Papaver spinosum*; Tournefort, *Argemone Mexicana*.

SARACENA.

THE *Saracena* has a double perianthium; the lower is composed of three small, oval, deciduous leaves; the upper one of five large, coloured, suboval, and deciduous ones: the corolla consists of five petals, of an oval figure, bent, and covering the stamina; their unguis are strait and oblong: the stamina are very numerous, small filaments: the antheræ are simple; the germen is roundish; the style is cylindric, and very short: the stigma is permanent; it is clypeated, peltated, pentangular, and covers the stamina: the fruit is a roundish capsule, with five cells: the seeds are numerous, roundish, and acuminate.

This

This genus comprehends the Calophyllon of Morison, and the Bucanophyllon of Plukenet.

Saracena foliis brevioribus.
The shorter-leaved *Saracena*.

The hollow-
leaved Plant.

The root is brown, hard, oblong, and creeping; the leaves are of a strange form, hollow and tumid: they are ten or twelve in number, four or five inches long, an inch in diameter, rounded, but somewhat gibbous, narrowest at bottom, and toward the top having a cavity there that will admit a man's thumb. At the top there stands a kind of lip, broad and patent, hoary underneath, and serving as a kind of operculum, being moveable, as it were, on a hinge; the opening of the cavity of the leaf is often covered with this. These leaves stand erect; but there are, besides these, a set of others, which are flat, roundish, two or three inches long, and spread round the base of these on the ground: the stalks are naked, and about a foot high; on the top of each stands a single flower, which is an inch and a half long, near an inch in diameter, not quite erect, of an odd form, and of a purplish colour.

It is a native of many parts of America, in damp places, and about the sea. C. Bauhine calls it, *Limonio congener Clusii*; and most of our old writers describe it under the name of the strange, hollow-leaved plant.

The other species are, 1. The longer-leaved, yellow-flowered *Saracena*. 2. The slender-stalked *Saracena*.

CLUSIA.

THE calyx is a perianthium, composed of five roundish, hollow, patent, and permanent leaves; the corolla consists of five large, hollow, roundish petals: the nectarinum is globose; it is formed of a single leaf, and includes the germen, but is open at the summit, to give passage to the stigma: the stamina are very numerous, simple filaments, shorter than the corolla: the antheræ are simple; the germen is of an ovato-oblong figure; there is scarce any style: the stigma is stellated, plane, obtuse, and has six dents at the edge: the fruit is an oval capsule, with six furrows on it; it is formed of six valves, and contains six cells; the valves open into a radiated form; the seeds are numerous, oval, and covered with a pulp, and fixed to a columnar, angular receptacle.

The number, in regard to the fruit, varies from five to ten; and the same proportion is observed in the stigma, the valves, and the cells.

It is an American, described by Plumier and by Plukenet, under the name of *Cenchrimea*.

MUNTINGIA.

THE calyx is a perianthium, formed of a single leaf, divided into five segments, and hollowed at the base: the segments are large, lanceolato-acuminated, and permanent; the corolla consists of five petals, large, roundish, and inserted into the cup; the stamina are numerous, and very short, capillary filaments; the antheræ are simple; the germen is globose and hairy; there is no style: the stigma is capitated and pentagonal: the fruit is a globose berry, containing only one cell, and umbilicated with the stigma: the seeds are numerous, roundish, and very small.

It is a native of South America, and is figured by Plumier.

SANGUINARIA.

THE calyx is a deciduous spatha, formed of two leaves, oval, hollow, and shorter than the flower: the corolla consists of eight oblong, obtuse, very patent petals, alternately narrower, and placed interiorly: the stamina are numerous, simple filaments, shorter than the corolla; the antheræ are simple; the germen is oblong and compressed; there is no style: the stigma is thick, bifurcated by a fria of the length of the stamina, and permanent: the fruit is an oblong, ventricose capsule, formed of

two

two valves, and pointed at each end: the seeds are numerous, roundish, and acuminate. Dillenius has figured it in his Hortus Elthamensis.

PODOPHYLLUM.

THE calyx is a spatula, emulating the figure of a perianthium; it is large, formed of three valves, of an oval figure, and hollowed, and is concavo-erect and deciduous: the corolla consists of nine hollow, rounded petals, folded or plicated at the rim, and smaller than the cup: the stamina are about twenty very short filaments; the antheræ are oblong and large; the germen is roundish; there is no style: the stigma is obtuse and plicated: the fruit is a capsule of an oval figure, containing only one cell, and crowned with the stigma: the seeds are numerous and roundish, and the receptacle free.

This genus comprehends the Anapodophyllum of authors. There is but one known species of it.

PODOPHYLLUM.

The May Apple.

The root is white, succulent, and tuberculous; the stalk rises single to six inches high, and there divides into two parts, of three or four inches long each; on each of these stands a large, single leaf, of a roundish figure, but divided into six parts, of the breadth of a man's hand, or more: the flowers stand singly between the two branches of the stalks, on a pedicle of half an inch long; before it is open, it resembles the fruit of the hip or wild rose; but, when open, it is large and white: the fruit is at first green; and when ripe, reddish.

It is a native of Virginia, &c. Tournefort calls it, *Anapodophyllum Canadense* Morini.

NYMPHÆA.

THE calyx is a large, coloured, and permanent perianthium, formed either of five or four leaves: the corolla consists of a number of petals, usually fifteen; they are smaller than the cup, and are inserted into the side of the germen, in more than a single series: the stamina are very numerous filaments, often not less than twenty; they are short, flattened, and crooked: the antheræ are oblong, and grow to the sides of the stamina: the germen is oval and large; there is no style: the stigma is orbiculated, plane, peltato-filiform, and marked with rays, crenated at the edge, and permanent: the fruit is a rude, oval, fleshy berry, drawn together at the neck, coronated at the top, and contains several cells, from ten to fifteen, which are full of pulp: the seeds are numerous and roundish.

The calyx and corolla in this genus are very uncertain, in regard to number and figure. The *Nymphaea* of Boerhaave has the petals small, and five roundish leaves to the cup: the *Leuconymphaea*, of the same author, has the cup scarce larger than the corolla, and consisting of four oval leaves; and the *Nelumbo* of Tournefort has the pericarpium truncated with cells, containing single seeds, making their appearance at peculiar apertures in the disk of the stigma. Yet all these are properly of the same genus.

Nymphaea calyce magno pentaphylla.

The Nymphaea, with a large pentaphyllous cup.

Yellow Water Lily.

The root is long, and as thick as a man's leg; the leaves are affixed to long pedicles, and swim on the surface of the water; they are somewhat longer than broad, and in some degree resemble the flat bottom of a horse's foot; the flowers are large and yellow, and they stand singly only on long pedicles, just shewing themselves above the surface of the water.

The plant is common in our rivers. The botanical writers in general call it, *Nymphaea lutea* major.

The other species are, 1. The great, white, water Lily. 2. The dentated-leaved, water Lily. 3. The round-leaved, white *Nymphaea*. 4. The *Nelumbo*, or Indian *Nymphaea*, with red flowers, called, by botanical writers, the *Faba Egyptiaca*.

Clas

Class the Thirteenth. Order the First.

Division the Second.

Polyandria Monogynia, with elongated styles.

DELIMA.

THE calyx is a perianthium, composed of five oblong leaves; there is no corolla: the stamina are numerous, short, and slender filaments: the antheræ are tumid and oblong; the germen is oval; the styles moderately long and slender; the stigma capitated; the fruit is a capsule formed of two valves, and containing only two seeds.

There is but one known species of this genus, which needs no farther description.

SLOANEA.

THE calyx is a perianthium, formed of a single leaf, divided into seven segments, of a ferni-lanceolated figure; there is no corolla, but the calyx is sometimes taken for one: the stamina are numerous, subulated filaments, broadest at top, and of the length of the cup; the antheræ grow to their sides: the germen is situated in the bottom of the cup: the style is subulated, and longer than the stamina; the stigma is acute: the fruit is a large, roundish, echinated capsule, formed of four valves; the seeds are oval, obtuse, fleshy, and have oblong nuclei.

It is a native of South America, and is figured by Plumier, 15.

XYLON.

THE calyx is a permanent, campanulated perianthium, formed of one leaf, and divided lightly into five parts at the edge; the corolla consists of a single petal, divided into five oval, hollow, patent segments: the stamina are subulated, and of the length of the corolla; the antheræ are oblong, crooked, and incumbent: the germen is roundish; the style is slender, and of the length of the stamina: the stigma is capitated; the fruit is a large, oblong, turbinate capsule, formed of five woody valves, and containing five cells: the seeds are roundish, and affixed to a columnar, pentagonal receptacle, and have a quantity of fine down or cotton adhering to them.

Xylon foliis digitatis, caule spinoso.

The prickly-stalked, digitated-leaved Xylon.

Prickly Cotton-tree.

This grows to be a large tree, fifty feet, or more, in height: the wood is spongy and soft; the bark brown and prickly: the leaves are of a digitated form, and rounded in their circumference; they stand on long, striated pedicles, nodose at the base: the flowers are large, and of a beautiful purple; they grow in clusters: the fruit contains a great quantity of cottony matter about the seed.

It is a native of both the East and West Indies. C. Bauhine calls it, *Gossipium arboreum caule spinoso*.

The other species are, 1. The willow-leaved, not prickly Xylon. 2. The larger-flowered, not prickly Xylon. 3. The fine downed Xylon or Cotton.

MIMOSA.

THE calyx is a very small perianthium, formed of a single leaf, and divided into five short segments at the top: the corolla is small; it consists of a single petal of a campanulated form, lightly divided into five segments: the stamina are a number of very long, capillary filaments; the antheræ are incumbent: the germen is oblong; the style is filiform, and shorter than the stamina: the stigma is truncated; the fruit is a long

long legumen or pod, with several transverse partitions in it: the seeds are numerous and roundish.

This genus comprehends the *Mimosa* of Tournefort, the *Acacia* of the same author, and the *Inga* of Plumier. In some the stamens are very numerous; in others they are regularly ten, in others only five, and in some but four; in this last case, the calyx and corolla are divided only into four segments. The legume of the *Mimosa* is articulated, and the leaves are sensitive; the legume of the *Acacia* is cylindric, and the leaves do not move on the touch; the legume of the *Inga* is fleshy, and the leaves are pinnated, and their rib alated.

After these distinctions, the description of even a single species is not necessary. The *Mimosa* of authors are, 1. The narrow-leaved *Mimosa*. 2. The broader-leaved *Mimosa*. 3. The *Mimosa*, with glomerated pods. 4. Prickly, large-leaved *Mimosa*. 5. The prickly and more robust *Mimosa*. 6. The *Mimosa*, with leaves on long pedicles.

The *Acacia* of authors are very numerous, but all that are called distinct species are not such: the more remarkable and certainly distinct are, 1. The *Farnesiana Acacia*, with double, distinct spines. 2. The true *Egyptian Acacia*, whence the *Succus Acaciae* and *Gum Arabic*. 3. The great-leaved *Acacia*. 4. The purple-flowered *Acacia*, with compressed pods. 5. The broad-leaved, white-flowered *Acacia*. 6. The tamarind-leaved *Acacia*. 7. The purple, walnut-leaved *Acacia*. 8. The very small-leaved *Acacia*. 9. The bull's-horn, or thick-spined *Acacia*. 10. The very numerous and small-leaved *Acacia*. 11. The tall, yellow-flowered *Acacia*.

CARYOPHYLLUS.

THE calyx is double; there is a perianthium for the flower, and another for the fruit: the perianthium of the fruit is permanent, very small, acute, and divided into four segments, and placed under the germen: the perianthium of the flower is placed upon the germen, and is composed of four roundish and hollow leaves: the corolla consists of four petals, roundish, crenated, and smaller than the leaves of the cup; the stamens are numerous, capillary filaments; the anthers are simple: the germen is oblong, large, and terminated by four rigid and patent corniculae: the style is simple, and inserted into a quadrangular receptacle; the stigma is also simple: the fruit is oval, and contains a single cell, and is umbilicated with the corniculae of the germen, which then become connivent: the seed is single, oval, and large.

Of this genus there is but one known species.

CARYOPHYLLUS.

The Clove-tree.

This grows to fifteen or twenty feet high; its trunk is thick, and its bark smooth and brown; the branches are numerous and spreading: the leaves stand very thick on them; they are four inches long, near two in breadth, and of the shape of those of the bay-tree: the flowers stand in clusters; they are small, of a beautiful blue, and very fragrant.

It is a native of Ternate, and some of the Molucca Islands. The cloves, used with us as a spice, are the embryo fruit, with the unopened flowers affixed to them. They are gathered in November.

MESNA.

THE calyx is a permanent perianthium, composed of four small, oval leaves: the corolla consists of four large, hollow, rounded petals: the stamens are very numerous filaments, of the length of the cup: the anthers are simple: the germen is roundish; the style is simple, and the stigma quadridentated: the fruit is a coriaceous capsule, of a roundish, acuminate figure, formed of four valves, and marked with as many elastic sutures running longitudinally: the seeds are four, large, fleshy, of a turbinate, triquetrous form, and obtuse.

Of this genus there is but one known species, an Asiatic, figured in the *Hortus Mal.* 3. 53.

MAMMEA





MAMMEA.

THE calyx is a deciduous perianthium, composed of two small, concave, oval leaves: the corolla consists of four roundish, hollow, patent petals, larger than the leaves of the cup: the stamina are numerous, simple filaments, of about half the length of the corolla; the antheræ are roundish; the germen is roundish; the style is conic, and of the length of the stamina; the stigma is simple and permanent: the fruit is a very large, fleshy herry, pointed with the style of a spherical figure, and containing only one cell: the seed is callous, and of an oval figure.

It is a native of South America, figured by Plumier 4.

CALOPHYLLUM.

THE calyx is a deciduous, coloured perianthium, divided into four segments: the corolla consists of four roundish, hollow, patent petals, and is larger than the cup: the stamina are numerous, capillary filaments, shorter than the corolla; the antheræ are roundish; the germen is roundish; the style is of the length of the stamina, and simple; the stigma is capitated; the fruit is a large, globose drupe, with only one cell: the seed is a large, single, globose, acuminate nut.

It is a native of the East Indies, and of South America. Plumier calls it Calaba.

EUPHORBIA.

THE calyx is a rugose, bellied, coloured perianthium, permanent, composed of a single leaf, and divided into four, sometimes into five, segments at the edge: the corolla consists of four, sometimes five, petals; they are thick, gibbous, turbinated, truncated, and situated irregularly, alternately with the segments of the cup, and are affixed by their unguis to the edge of the cup; these, as well as the cup, are permanent: the stamina are numerous filaments, twelve, or more, slender and affixed to the receptacle, and longer than the corolla: the antheræ are globose and didymous; the style is simple and short; the germen roundish, but three-cornered: the stigmata are three, semibifid and obtuse: the fruit is a roundish, trilobated capsule, containing three cells, and hanging on the style, which becomes elongated; the seeds are single and roundish.

This genus comprehends the *Tithymalus*, the *Tithymaloides*, the *Efula*, and the *Euphorbium* of authors.

The *Euphorbium* has a fleshy or angular stalk; and the petals, in some species, are trifid; it has no leaves. The *Tithymalus* has leaves on the stalk, and the stalk of the common kind; and the *Tithymaloides* has the calyx, gibbous on the lower side.

After these distinctions, descriptions of any of the species are not necessary. The species, called *Euphorbia* by authors, are, 1. The thick-stalked, cereus-like *Euphorbia*, from which the *Euphorbium* of the shops is obtained. 2. The thinner-stalked, cereus-like *Euphorbia*. 3. The seven-ribbed *Euphorbia*, with long spines. 4. The many-ribbed, tuberculous *Euphorbia*. 5. The four or five-ribbed, thick *Euphorbia*. 6. The tuberosus, squamous-stalked *Euphorbia*. 7. The Medusa *Euphorbia*. 8. The conic *Euphorbia*. 9. The opuntia-like *Euphorbia*. 10. The *Euphorbia*, without prickles.

Of those, called by Boerhaave *Tithymaloides*, there are, 1. The large, myrtle-leaved *Euphorbia*. 2. The nerium-leaved *Euphorbia*. 3. The broader, nerium-leaved *Euphorbia*.

The species, called *Tithymals* by authors, are very numerous. We have, native in our own kingdom, 1. The wood-spurge, or great almond-leaved *Euphorbia*. 2. The longer-leaved, wood *Euphorbia*. 3. The rough-fruited *Euphorbia*. 4. The sea-spurge, or *Euphorbia*. 5. The knobby-rooted *Euphorbia*. 6. The wild, broad-leaved *Euphorbia*. 7. The long-leaved, corn *Euphorbia*. 8. The round-leaved, sea *Euphorbia*. 9. The dwarf, annual *Euphorbia*. 10. The sun-spurge, or *Euphorbia*. 11. The little, round-leaved *Euphorbia*. 12. The little, purple, round-leaved *Euphorbia*.

The

The species of other parts of the world are yet more numerous : they are, 1. The broad-leaved, tree Euphorbia. 2. The soft-leaved, tree Euphorbia. 3. The roundish-leaved, tree Euphorbia. 4. The almond-leaved, tree Euphorbia. 5. The box-leaved, tree Euphorbia. 6. The great, long-leaved Euphorbia, or Cataputia. 7. The lesser, Cataputia. 8. The broad-leaved, Spanish Euphorbia. 9. The hoary Euphorbia. 10. The flax-leaved Euphorbia. 11. The red-headed Euphorbia. 12. The toad-flax-leaved, lunated-flowered Euphorbia. 13. The flax-leaved, tree Euphorbia. 14. The prickly, sea Euphorbia. 15. The willow-leaved Euphorbia. 16. The shrubby, hog Euphorbia. 17. The little, hairy, round-leaved Euphorbia. 18. The cordated-leaved Euphorbia. 19. The procumbent Euphorbia.

TRIUMFETTA.

THERE is properly no calyx ; some have taken the corolla for a calyx, but erroneously : the corolla consists of five linear, erect, obtuse petals ; they are hollowed and bent backward ; the point is prominent, below the apex, and they are deciduous : the stamina are sixteen equal, erect, subulated filaments, of the length of the corolla ; the antheræ are simple : the germen is roundish ; the style is of the length of the stamina ; the stigma is bifid and acute : the fruit is a globose capsule, every-where surrounded with hooked prickles, and contains four cells : the seeds are two, convex on one side, and angular on the other, but one of the two seeds of each cell usually ripens.

It is a native of South America, and is figured by Plumier, 8.

P E G A N U M.

THE calyx is a permanent perianthium, composed of five linear, erect, acute leaves, of the length of the corolla : the corolla is composed of five petals, of an oblong, oval figure, and placed erecto-patent : the stamina are fifteen subulated filaments, dilated at the base, and of about half the length of the corolla : the antheræ are oblong and erect : the germen is roundish, but somewhat trigonal ; the style is filiform, and three-cornered, and of the length of the antheræ ; the stigmata are three, and longer than the style : the fruit is a capsule, of a roundish but somewhat trigonal figure ; it is composed of three valves, and contains three cells : the seeds are numerous, oval, and pointed.

P E G A N U M.

Wild Rue, or Harmel.

The root is fibrous ; the stalks are numerous, firm, hard, and grow to a foot, or more, in height : the leaves are divided into a multitude of long and narrow segments ; the flowers stand at the tops of the branches, and are large and white ; the antheræ are yellow.

It is a native of the East, and grows in loose sand, where scarce any other plant can live. Tournefort calls it, Harmala ; C. Bauhine, Ruta sylvestris flore albo magno ; others, Ruta Syriaca.

E L Æ O C A R P U S.

THE calyx is a small perianthium, composed of five oblong, pointed leaves : the corolla consists of five petals ; the stamina are a number of oblong, slender filaments ; the antheræ are tumid ; the germen is oval and thick ; the style slender ; the stigma capitated ; the fruit is a drupe, with a crisp nucleus.

M I C R O C O S.

THIS genus is very nearly allied to the Elæocarpus : the calyx is a perianthium, composed of five oblong leaves : the corolla is formed of five petals ; the stamina are numerous, oblong, slender filaments ; the antheræ are oval ; the germen is roundish ; the style is slender, and the stigma small : the fruit is a drupe, as in the former, but the nucleus is fibrous.

These

These two genera are sufficiently distinguished by their corollæ, calyces, and fruit; both from all the others of this division, and from each other.

MENTZELIA.

THE calyx is a perianthium, divided into five segments; it is patent, and is placed on the extremity of a very long germen: the segments are of a lanceolated figure, and deciduous: the corolla consists of five petals, of an obversely ovated figure, patent, and somewhat larger than the calyx: the stamina are numerous, setaceous, erect filaments; the antheræ are simple; the germen is cylindric, and very long; it stands under the calyx; the style is setaceous, and of the length of the corolla; the stigma is simple: the fruit is a long, cylindraceo-clavate capsule, containing only one cell; the seeds are numerous, small, and roundish.

It is a native of South America, figured by Plumier.

OCHNA.

THE calyx is a deciduous perianthium, composed of five, small, patent leaves, of an ovato-lanceolated figure: the corolla consists of five roundish petals; their ungues are of the length of the leaves of the calyx; they are patent, and very obtuse at the extremities: the stamina are a number of very small, connivent filaments; the germen is oval; the style subulated, longer than the stamina, and erect: the fruit is a very large, fleshy, roundish, truncated receptacle, containing on each side a single berry, of an oval figure, and immersed at the base: the seed is single and oval.

It is a native of South America, and is figured by Plumier, under the name of Jabotapita.

CISTUS.

THE calyx is a permanent perianthium, composed of five roundish, hollow leaves, two of which are alternately smaller, and placed lower than the rest: the corolla consists of five large, plane, patent petals, of a roundish figure: the stamina are a great number of capillary filaments, shorter than the corolla; the antheræ are roundish and small; the germen is roundish; the style is simple, and of the length of the stamina; the stigma is plane and orbiculated: the fruit is a roundish, covered capsule; the seeds are numerous, roundish, and small.

This genus comprehends the Cistus and the Helianthemum of Tournefort. The Cistus has a capsule with only one cell; that of the Helianthemum has five or ten cells.

1. *Cistus arboreus foliis rugosis, ovatis, et lanceolatis.*

Long-leaved

The shrubby Cistus, with oval and lanceolated leaves.

Pale Cistus.

The root is brachisted and creeping; it grows to four feet high: the stalks are brittle; the leaves toward the lower part grow together at their bases in pairs, and are of an oval figure; the rest are separate, and pointed at the ends; they are all rugose and hoary. The flowers are as big as those of the wild rose, and of a pale flesh colour.

It is a native of all the warmer parts of Europe. C. Bauhine calls it, Cistus mas folio oblongo incano; Parkinson, Cistus mas vulgaris.

2. *Cistus stipulis quaternis, foliis oblongis, caule procumbente.*

The procumbent, oblong-leaved Cistus, with quaternate stipulæ.

**Dwarf
Cistus.**

The root is oblong and woody; the stalks are a foot long, numerous, hard, and procumbent: the leaves stand in pairs; they are half an inch long, and a third of an inch in breadth: the flowers are of the breadth of a shilling, and of a bright yellow.

It is common with us by road-sides. C. Bauhine calls it, Chamæcistus flore luteo.

The other species of the *Cistus*-kind are, 1. The rounder-leaved *Cistus*. 2. The great, hoary-leaved *Cistus*. 3. The oblong, narrow, hoary-leaved *Cistus*. 4. The tall, sage-leaved *Cistus*. 5. The procumbent, sage-leaved *Cistus*. 6. The narrow-leaved *Cistus Ladanifera*. 7. The willow-leaved *Cistus Ladanifera*. 8. The bay-leaved *Cistus Ladanifera*. 9. The poplar-leaved *Cistus Ladanifera*. 10. The broader, hairy-leaved *Cistus Ladanifera*. 11. The narrower, hairy-leaved *Cistus Ladanifera*. 12. The rosemary-leaved *Cistus Ladanifera*.

Of the *Helianthemum*, or dwarf *Cistus*-kind, are, 1. The narrow-leaved, hairy, white-flowered *Cistus*. 2. The serpyllum-leaved, yellow-flowered *Cistus*. 3. The myrtle-leaved *Cistus*. 4. The narrow-leaved, taller *Cistus*. 5. The thyme-leaved *Cistus*. 6. The shrubby, marjoram-leaved *Cistus*. 7. The smooth, thyme-leaved *Cistus*. 8. The willow-leaved *Cistus*. 9. The lavender-leaved *Cistus*. 10. The spotted-flowered *Cistus*. 11. The umbellated-flowered *Cistus*. 12. The broad-leaved *Cistus*. 13. The narrow-leaved *Cistus*. 14. The plantain-leaved *Cistus*. 15. The origanum-leaved *Cistus*. 16. The *Cistus*, with narrow leaves, hoary underneath.

C O R C H O R U S.

THE calyx is a deciduous perianthium, composed of five erect, acute leaves, of a linear-lanceolated figure: the corolla consists of five oblong, obtuse petals, narrowest at the bottom, erect, and of the length of the cup: the stamina are a great number of capillary filaments, shorter than the corolla; the antheræ are small: the germen is oblong and sulcated; the style is thick and short, and the stigma is bifid: the fruit is a very large cylindric, acuminate pod, composed of five valves, sometimes only of two, and contains five cells: the seeds are numerous, angular, and acuminate.

Corchorus capsulis oblongis ventricos.

The oblong and ventricose-podded Corchorus.

**Jew's
Sallad.**

The root is oblong and white; the plant rises to a foot and half high: the stalk is smooth; the leaves are oblong, three inches in length, and half as much in breadth, serrated round the edges, and the lowest serratures longer than the rest, and terminating in a kind of hair, that bends back with them: the flowers are yellow, and of the breadth of a shilling; the pods are three inches long, and striated with yellow lines.

It is a native of Egypt. C. Bauhine calls it, *Corchorus Plinii*; J. Bauhine, *Corchorus*, five *Melochia*.

The other species are, 1. The roundish, podded *Corchorus*. 2. The linear, podded *Corchorus*.

S A U V A G E A.

THE calyx is a permanent perianthium, composed of five acute, lanceolated leaves: the corolla consists of five obtuse, equal petals, shorter than the leaves of the cup: the nectarium consists of five lesser leaves, placed alternately with the petals: the stamina are numerous, capillary filaments, shorter than the petals, and situated out of the corolla, but within the cup: the antheræ are roundish; the germen is oval; the style is simple, and of the length of the stamina: the stigma is simple; the fruit is an oval, acuminate capsule, covered by the cup, containing one cell, and in it a number of seeds.

T I L I A.

THE calyx is a perianthium, divided into five parts, hollow, coloured, deciduous, and nearly of the size of the corolla: the corolla consists of five oblong, obtuse petals, crenated at the extremities: the stamina are numerous filaments, thirty, or more; they are subulated, and of the length of the corolla; and the antheræ are roundish: the germen is roundish; the style is filiform, and of the length of the stamina; the stigma is obtuse and pentagonal: the fruit is a coriaceous capsule, of a globose figure, divided into five cells, formed of five valves, and opening at the base: the seeds

seeds are single and roundish; one seed only of the five usually ripens, and the very cells of the others often disappear, so that the fruit seems unilocular.

Tilia foliis latioribus profundius serratis.
The broader and more deeply serrated-leaved Tilia.

The common Lime.

The tree grows to fifty feet high. The wood is white; the bark dark brown; the branches are numerous; the leaves two inches and a half long, and two inches broad; they are deeply serrated at the edges. The flowers are white and fragrant.

It is common in our plantations. C. Bauhine calls it, *Tilia foemina folio majore*.

The other species are, 1. The smaller-leaved Tilia. 2. The hairy-leaved Tilia, with red twigs.

VATERIA.

THE calyx is a small, acute, permanent perianthium, divided into five segments: the corolla consists of five oval, patent petals: the stamina are numerous filaments, shorter than the corolla: the antheræ are simple; the germen is roundish; the style is simple and short; the stigma is capitated: the fruit is a turbinated, coriaceous capsule, situated on the style, which is reflex, and marked with three futures; it is formed of three valves, and contains one cell: the seed is single and oval.

It is an Asiatic, described in the Hortus Malabaricus, vol. 4. fol. 15.

CHRYSOBALANUS.

THE calyx is a permanent perianthium, formed of a single leaf, plane, and divided into five parts at the top: the corolla consists of five plane, oval, patent petals: the stamina are numerous, erect, villose filaments, placed in a circular order: the antheræ are small; the germen is oval: the fruit is a large, oval berry, with one cell; the seed a brittle, rugose, oval nut, with five remarkable furrows.

It is an American, described by Plumier, under the name of *Itaco*.

PLINIA.

THE calyx is a small, plane, acute perianthium, formed of a single leaf: the corolla consists of a single petal, divided into five oval, hollow segments: the stamina are numerous, capillary filaments, of the length of the corolla: the antheræ are small; the germen is small; the style is subulated, and more than of the length of the stamina: the stigma is simple: the fruit is a large, globose berry, striated, and containing only one cell: the seed is single, very large, globose, and smooth.

It is an American, figured by Plumier.

PORTULACA.

THE calyx is a small, bifid, permanent perianthium, compressed at the top, and situated on the germen: the corolla consists of five plane, erect, obtuse, emarginated petals, larger than the calyx: the stamina are very numerous, capillary filaments, of about half the length of the corolla: the antheræ are simple; the germen is oval; the style is simple and short: the stigmata are six in number, oblong, and of the length of the style: the fruit is an oval, covered capsule, containing only one cell, and opening horizontally at the middle: the seeds are numerous and small.

Portulaca foliis cuneiformibus sessilibus.
The Portulaca, with cuneiform leaves without pedicles.

Common Purslain.

The root is oblong, white, and woody. The stalks are numerous, procumbent, and a foot long, reddish, thick, round, and succulent. The leaves are thick and succulent, narrowest at the base, and broadest at the other extremity. The flowers are small and yellow; the fruit is of the size of a barley-corn.

It is a native of France and Italy, and is common in our gardens. C. Bauhine calls it, *Portulaca latifolia sativa*; it is eaten at our tables.

The

The other species are, 1. The narrow-leaved Portulaca. 2. The broad-leaved, red-flowered Portulaca. 3. The oblong, narrow, and glossy-leaved Portulaca. 4. The procumbent, capparid-leaved Portulaca. 5. The woolly Portulaca.

ANACAMPSEROS.

THE calyx is a permanent, bivalve perianthium, of an ovato-acuminate figure; the valves are hollowed, acute, and embrace one another: the corolla consists of five roundish, hollow, patent petals, nearly equal in size: the stamina are numerous, capillary filaments, of about half the length of the corolla; the antheræ are simple; the germen is roundish; the style is simple; the stigmata are three, and are thick: the fruit is an oval, but somewhat triangular, capsule, formed of three valves, containing three cells: the receptacle is free: the seeds are numerous, small, and roundish.

This genus comprehends the Telephiastrum of Dillenius.

Anacampseros foliis ovatis convexis acutiusculis.

The Anacampseros, with oval, convex, and somewhat acute leaves.

The root is white and fibrous: the stalk is round, very ramose, and procumbent: the leaves are thick, succulent, and pointed at the extremities: the flowers stand on long pedicels, at the extremities of the branches; they are of a bright and beautiful red colour.

It is a native of Ethiopia, but it is kept in some of our stoves. Dillenius calls it, Telephiastrum flore globofo; Ray, Portulaca sempervirens flore rubro.

The other species are, 1. The tree Anacampseros, with cuneiform leaves. 2. The short-leaved Anacampseros.

T H E A.

THE calyx is a very small, plane, permanent perianthium, divided into six roundish, obtuse leaves: the corolla consists of six large, roundish, hollow, equal petals: the stamina are numerous filaments, about two hundred; they are very slender, capillary, and shorter than the flower: the antheræ are simple; the germen is globose and trigonal: the style is subulated, and of the length of the stamina: the stigma is triple: the fruit is a capsule, formed of three globular bodies, growing together; it contains three cells, and opens into three parts at the top: the seeds are single, globose, and internally angulated.

Of this genus there is but one known species.

T H E A.

The Tea-tree.

This shrub grows to five feet high, and is very ramose. Its root is spreading and fibrous. Its leaves are about an inch long, near half an inch broad, serrated, and terminate in a point. The flowers are large, white, and very beautiful.

It is a native of China and Japan. It is planted also in many parts of the East, for the sake of its leaves, which are our Tea. All the kinds of that precious commodity are the leaves of the same species, and differ only according to the time at which they are gathered, and the manner of curing them; some are gathered in the bud, some, when opening, and some, when more fully expanded; and some are dried with artificial heat, some without.

B I X A.

THE calyx is a very small, permanent perianthium, divided into five short segments at the top: the corolla is double; the exterior one consists of five large, oblong, equal, and thick petals; the interior, of five petals also, like those of the other, but thinner: the stamina are numerous, setaceous filaments, of about half the length of the corolla: the antheræ are erect; the germen is oval; the style is filiform, and of the length of the stamina: the stigma is parallelly bifid, and compressed: the fruit

is

is an ovato-cordated, compressed capsule, surrounded with hairs, formed of two valves, opening at the angles, containing only one cell, but with an interior bivalve membrane: the seeds are numerous, turbinate, and truncated at the umbilicus: the receptacle is linear, longitudinal, and grows to the middle of the valves.

Of this genus there is but one known species.

B I X A.

The Roucou-tree.

The tree rises to twenty or thirty feet high; the wood is white, the bark brown. The leaves stand alternately; they are of a heart-like shape, pointed at the extremity, about three inches long, and are placed on long pedicels. The flowers stand in clusters, at the extremities of the branches, and are large and white. The fruit is of the size of a large plum.

It is a native of the warmer parts of America. Tournefort calls it, *Mitella maxima tinctoria*; Plukenet, *Orleana*, or *Orellana folliculis lappaceis*. A reddish matter, used in dying, is prepared from the fruit, and other parts of the tree, called, by a very improper name, *Terra Orleana*.

Class the Thirteenth. Order the Second.

POLYANDRIA DIGYNIA.

Plants which have in every flower numerous stamina and two styles.

HELIOCARPUS.

THE calyx is a deciduous perianthium, composed of four long, and somewhat broad, linear, and patent leaves: the corolla consists of four petals, considerably shorter and narrower than the leaves of the cup, but also linear in figure: the stamina are sixteen fibulated filaments, nearly of the length of the cup: the antheræ are didymous, linear, and incumbent: the germen is roundish: the styles are two, erect, and of the length of the stamina: the stigmata are acute and distant: the fruit is a pedunculated capsule, of a turbinate, oval figure, containing two cells, and surrounded perpendicularly with pinnately ramose radii: the seeds are single and oval.

It is a native of America, and is described by Houlton.

PÆONIA.

THE calyx is a small, permanent perianthium, composed of five roundish, hollow leaves, unequal both in their size and situation: the corolla consists of five very large, roundish, hollow, patent petals, narrowest toward the base: the stamina are very numerous, short, capillary filaments: the antheræ are large, oblong, quadrangular, erect, and contain four cells: the germina are two; they are oval, erect, and hairy: there are no styles; the stigmata are compressed, oblong, obtuse, and coloured: the fruit consists of two capsules, reflexo-patent, of an oblong, oval figure, hairy, containing each one cell, formed each of a single valve, and opening longitudinally inwards: the seeds are numerous, oval, smooth, beautiful, and coloured. The number of the germina, though naturally two, varies greatly; in some flowers there are five.

PÆONIA.

The Piony.

The root is composed of a number of oblong tuberosities. The plant rises to three feet high. The stalks are round, reddish in many places, ramose, and robust. The leaves are composed of several smaller ones, and are of a bluish-green colour on the upper surface, and hoary underneath. The flowers stand singly on the tops of the branches; they are as large as roses, and of a beautiful crimson colour.

This is the natural state of the Piony; culture gives it double flowers, and alters their colour into that of all the degrees between a deep blood colour and white. The leaves of the plant also become broader or narrower, from the same means; the species, however, is the same in all. Authors have called the varieties by names, as if distinct species:

cies; *Paeonia formosa*, *Paeonia multiplex*, &c. Tournefort enumerates near twenty of them.

It is a native of some parts of Europe, and of the islands of the Archipelago. C. Bauhine and others call it, *Paeonia mas*. It's root is an antiepileptic.

CALLIGONUM.

THE calyx is a permanent perianthium, composed of five roundish and hollowed leaves: there is no corolla: the stamina are numerous, very small filaments: the anthers are didymous; the germen is oval: there is no style, but the stigmata are two, and obtuse: the fruit is an oval, compressed, striated, hairy pericarpium, with bifid tops, turning backwards: the seed is single.

This genus comprehends the *Polygonoides* of Tournefort.

Class the Thirteenth. Order the Third.

POLYANDRIA TRIGYNIA.

Plants which have numerous stamina and three styles in every flower.

RESEDA.

THE calyx is a perianthium, formed of a single leaf, and divided into several narrow, erect, acute, permanent segments; two of these are placed at a greater distance than the rest, for the use of the melliferous petal: the corolla consists of certain unequal petals, some one of them always semitrifid; the upper one gibbous at the base, containing a honey-like juice, and of the length of the calyx: the nectarium is a plane, erect gland, produced from the receptacle, placed on it's upper side, between the stamina and the upper petal, and connivent with the base of the petals, more dilated from the same side: the stamina are numerous, short filaments: the anthers are erect, obtuse, and of the length of the corolla: the germen is gibbous, and terminates in some very short styles: the stigmata are simple: the fruit is a gibbous, angulated capsule, acuminate with the styles, and open between them; it contains only one cell: the seeds are numerous, kidney-shaped, and grow to the angles of the capsule.

This genus comprehends the *Reseda luteola* and *Sesamoides* of Tournefort; but it varies so extremely in it's fructification, that there is not in all botany a genus so difficult to be characterised or ascertained; the several species have surprising variations from one another, though evidently all of the same family. The essential characters are the trifid petals, one of them melliferous at the base, and the open capsule.

Reseda foliis omnibus trifidis, inferioribus pinnatis.

The Reseda, with all the leaves trifid, and the lower ones pinnated. Base Rocket.

The root is oblong and white. The stalks are numerous, slender, and a foot and a half high. The leaves are finely divided into narrow, trifid segments. The flowers are small and yellow, and are placed in long spikes, at the tops of the stalk and branches.

It is a native of England, in dry places. C. Bauhine calls it, *Reseda vulgaris*; and, it's leaves being sometimes curled up, authors have made another species from this variety, under the name of *Reseda crispa*.

The other species are, 1. The pinnated-leaved, great Rocket. 2. The whole-leaved *Reseda*, or *Phyteuma*. 3. The little, white *Reseda*, called *Sesamoides Salamanticum parvum*. 4. The linaria-leaved *Reseda*. 5. The broad-leaved, yellow *Reseda*. 6. The willow-leaved *Reseda*, called *Luteola*, or *dyers-wood*. 7. The little, road-flax leaved *Reseda*, or *Luteola*. 8. The purple-flowered *Reseda*. 9. The stellated-fruited *Reseda*.

DELPHINIUM.

DELPHINIUM.

THE Delphinium has no calyx: the corolla consists of five unequal petals, disposed circularly; of these the upper one is anteriorly more obtuse than the others, and is emarginated, and extended behind into a tubulated horn, which is straight, long, and obtuse; the others are of an ovato-lanceolated figure, and patent, and are nearly equal: the nectarium is bifid, and is placed anteriorly among the petals on the upper part; behind it is protended outwards, and is inclosed in the tube of the corolla: the stamina are numerous, very small, subulated filaments, broadest at their base, and inclined toward the petal that has the spur: the antheræ are erect and small; the germina are sometimes three, sometimes there is but one, of an oval figure; the styles are of the length of the stamina; the stigmata are simple and reflex: the fruit consists of one, or of three, capsules, of an ovato-subulated figure, straight, composed of a single valve, and opening inwards: the seeds are numerous and angular.

This genus comprehends the Delphinium of Tournefort, the Buccinum of Malpighi, and the Staphisagria; but the nectarium in the Staphisagria is double.

Delphinium caule simplici, nectariis monophyllis. Lark's:
The Delphinium, with a simple stalk and one-leaved nectaria. spur.

The root is fibrous. The plant rises to two or three feet high. The stalk is slender, but strong. The leaves are placed alternately, and very close; they are of a deep green colour, divided into five segments, and smooth. The flowers are large, and naturally of a fine deep blue colour; but they vary from this red and white.

It is common in gardens. C. Bauhine calls it, *Consolida hortensis flore simplici majore*; Tournefort, *Delphinium vulgare*.

Tournefort has enumerated not less than four-and-twenty varieties of this, as distinct species. The other really distinct species of Delphinium are, 1. The tall, hoary Delphinium. 2. The aconite-leaved Delphinium, called *Aconitum lycaconum*. 3. The narrower-leaved Delphinium; this has also been divided into ten or a dozen species by Tournefort. 4. The platanus-leaved Delphinium, called *Staphisagria*, or *Stavesacre*, the seeds of which are kept under that name in the shops, and used to destroy vermin in children's heads.

ACONITUM.

THERE is no calyx: the corolla consists of five unequal petals, the opposites ones equal; the upper petal is galeated and tubulated, inverted, and has it's back upwards; it is obtuse, and it's top is turned back to the very base; it is acuminate, and the base is opposite: the two lateral petals are broad, rounded, erecto-opposite, and connivent; the two lower ones are oblong, and bend downwards: the nectaria are two; they are striated under the upper petal; they are hollow, nutant, and have an oblique opening, and a crooked tail, and they are placed upon long, subulated filaments, or peduncles: the stamina are numerous, very small, subulated filaments, broadest toward the base, and inclined toward the upper petal: the antheræ are erect and small: the germina are in most species three, in some five; they are oblong, and terminate in so many styles, of the length of the stamina: the stigmata are reflex and simple: the fruit is composed of as many capsules as there were germina; they are of an ovato-subulated figure, straight, formed each of a single valve, and open inwards: the seeds are numerous, angular, and rugose.

This genus comprehends the *Aconitum*, *Napellus*, and *Anthers* of Tournefort, Rivinus, &c.

Aconitum

*Aconitum foliorum laciniis linearibus, distinctis, ubique
eiusdem latitudinis.*

*The Aconite, with the segments of the leaves linear
and distinct, and all the way of the same breadth.*

Healing
Wolf's Bane.

The root is composed of a number of oval tubera, furnished with some fibres; they are brown without, and white within: the plant grows to a foot, or more, in height; the stalk is rigid, striated, and hairy: the leaves are divided into long, narrow segments, of a dusky green on the upper side, and hoary underneath: the flowers are moderately large, and yellow, and are of a good smell.

It is a native of the Alps and Pyrenees; its root is kept in the shops, under the name of *Anthoræ Radix*, and supposed an alexipharmic. C. Bauhine calls it, *Aconitum salutiferum*.

The other species of Aconite are, 1. The plantain-leaved, yellow Aconite. 2. The finely, divided-leaved Aconite. 3. The great, blue Aconite, or Napellus. 4. The narrow-leaved, inflex-spiked Aconite. 5. The broader-leaved, reflex-spiked Aconite. 6. The dwarf, blue-flowered Aconite. 7. The many-flowered, pyramidal-spiked Aconite. 8. The tall, dark-leaved Aconite.

Class the Thirteenth. Order the Fourth.

POLYANDRIA TETRAGYNIA.

Plants which have numerous stamina and four styles in each flower.

TETRACERA.

THE calyx is a permanent perianthium, composed of six roundish, patent leaves; the exterior ones alternately shorter: the stamina are numerous, simple filaments, of the length of the calyx; they are permanent, and the anthers are simple: the germina are four, oval and separate from one another: the styles are subulated and very short; the stigmata are obtuse: the fruit is composed of four capsules; they are of an oval figure, reflex, formed each of a single valve, opening by a suture in the upper part, and containing only one cell: the seeds are single, roundish, and covered.

This is an American described by Houston, but confounded with the *Petræa*.

Class the Thirteenth. Order the Fifth.

POLYANDRIA PENTAGYNIA.

Plants which have numerous stamina and five styles in every flower.

AQUILEGIA.

THERE is no calyx; the corolla consists of five plane, patent, equal petals, of a lanceolato-ovate figure: the nectaria are five in number; they are equal, and stand alternately with the petals: they are corniculate, and grow gradually wider at their upper part; their opening is oblique, ascending upwards, and internally affixed to the receptacle; in the lower part they are carried into a tube, which is long, attenuated, pendulous, and has its extremity obtuse and crooked: the stamina are numerous, subulated filaments, from thirty to forty; the exterior ones are the shorter: the anthers are oblong, erect, and of the height of the nectaria: the germina are five, of an ovato-oblong figure, and terminate in subulated styles, longer than the stamina; the stigmata are erect and simple. There are ten short, rugose paleæ, which separate the germina: the fruit consists of five strait, parallel, cylindric, acuminate capsules; each consists of a single valve, and opens from the top inwards: the seeds are numerous, oval, carinated, and adhere to the future.

Aquilegia

Aquilegia nectariis incurvis.
The Aquilegia, with crooked nectaria.

**Common
Columbine.**

The root is large, oblong, and fibrated; the plant rises to two feet high: the stalks are slender and branched; the leaves are of the composite kind; their pedicles are usually divided in a ternate manner, and the leaves are three on each ultimate pedicle; they are broad, and of a bluish-green: the flowers hang from the tops of the stalks; they are large, and naturally of a beautiful blue, sometimes reddish or white.

C. Bauhine calls this, *Aquilegia sylvestris*; others, *Aquilegia simplex* five vulgaris. Culture makes a great variety in the colour and structure of the flowers, rendering them double, &c. Tournefort and others have described all these varieties as distinct species, under the names double Columbines, rose Columbines, and the like.

The other really distinct species are, 1. The early, dwarf *Aquilegia*, with strait nectaria. 2. The small-flowered, thalictrum-leaved *Aquilegia*. 3. The great-leaved, smaller-flowered *Aquilegia*.

NIGELLA.

THERE is no calyx, though in some species the floral leaves give an appearance of one: the corolla consists of five plane, oval, obtuse petals, patent, and narrowest toward the base: the nectaria are eight, they are very short, and are placed in a circular direction, and each is bilabiate: the outer lip is the larger, and stands lowest; it is bifid, plane, convex, and marked with two dots: the interior one is short and narrow; the stamina are numerous, subulated filaments, shorter than the corolla: the antheræ are compressed, obtuse, and erect: the germina of the pistil are, in some species, five, in others ten; they are oblong, compressed, convex, erect, and terminate in subulated styles, which are angular, very long, revolute, and permanent: the stigmata are longitudinal and adnate: the fruit consists of as many capsules as there were germina; they are oblong, compressed, acuminate, joined by an internal suture, and open upwards and inwards: the seeds are numerous, angular, and rough.

Nigella foliis involucri foliis cinctis.

The Nigella, with the leaves surrounded with a folio involucre.

**Common
Nigella.**

The root is oblong, hard, and yellow; the plant rises to a foot and half high: the stalk is a foot high, smooth, striated, and hollow; the leaves are divided into a number of fine narrow segments: the flowers are large, blue, and surrounded at the base with five floral leaves as with a cup.

It is a native of France. C. Bauhine calls it, *Nigella angustifolia flore majore simpliciter caeruleo*.

The other species are, 1. The yellow, oriental *Nigella*. 2. The hairy-leaved, white-flowered *Nigella*. 3. The Spanish *Nigella*, with broad leaves, and large blue flowers. 4. The Cretic *Nigella*.

Authors have taken varieties for species, and have extended the number much beyond this. Tournefort mentions a red-flowered, a white-flowered, and the like, as species which are, in reality, only varieties of the common kind.

Class the Thirteenth. Order the Sixth.

POLYANDRIA PENTAGYNIA.

Plants which have in every flower numerous stamina and six styles.

STRATIOTES.

THE calyx is a permanent spathe, formed of two leaves, compressed, obtuse, connivent, and carinated on each side: besides this, there is also a perianthium, which is formed of a single leaf, divided into three segments, and is acute and deciduous.

ous: the corolla consists of three obversely cordated, erecto-patent petals, of double the size of the cup: the stamina are twenty filaments, of the length of the perianthium, and are inserted into the receptacle; the anthers are simple: the germen stands under the receptacle of the perianthium: the styles are six; they are divided into two parts, and are of the length of the stamina; the stigmata are simple: the fruit is a berry covered with the cup; it is of an oval figure, attenuated at each end, and in some measure hexædral, and contains six cells: the seeds are numerous, oblong, crooked, and, as it were, alated.

Of this genus there is but one known species.

STRATIOTES.

Fresh Water Soldier.

The root is composed of a number of long and thick fibres; the plant floats on the surface of the water, and these descend eight or ten inches from it, and have tufts of fibrils at their ends: the leaves are numerous, oblong, serrated at the edges, and in some degree prickly, and terminate in a point; they resemble the leaves of aloes, but are not above four inches long: the flowers arise among these; they stand on short pedicles, and are moderately large and white.

It grows in standing waters in Lincolnshire, and some other parts of England. C. Bauhine calls it, *Aloe palustris*; others, *Militaris aizoides*, and *Aloides*.

Class the Thirteenth. Order the Seventh.

POLYANDRIA POLYGYNIA.

Plants that have numerous stamina and numerous styles in every flower.

DILLENIA.

THE calyx is a permanent perianthium, composed of five large, coriaceous, roundish, hollow leaves: the corolla consists of five coriaceous, large, roundish, hollow petals: the stamina are very numerous filaments, arranged together in a globular form: the anthers are oblong and erect; the germinal of the pistil are about twenty in number, of an ovato-oblong figure, and acuminate, compressed, and connected on their inner sides: the stigmata are large, of a lanceolated figure, plane on the outside, permanent, and form a kind of star: the fruit is roundish, and is externally covered with a number of capsules equal to that of the stigmata; these are oblong, and divided by a furrow; within there is a large, columnar, pulpy receptacle: the seeds are numerous and very small.

Of this genus there is but one known species.

DILLENIA.

The root is brachiated; the tree rises to fifty feet high, the leaves are as large as those of our laurel, and resemble them in shape: the flower is five inches in diameter, white, and sweet-scented; the fruit is as large as an orange.

It is a native of the East Indies, and is figured in the *Hortus Malabaricus*, under the name of *Syalita*.

LIRIODENDRON.

THE calyx is a deciduous perianthium, composed of three oblong, hollow, patent leaves, resembling petals of a flower: the corolla consists of petals, six or nine in number, oblong, erect, obtuse, narrowest at the base, and equal: the stamina are numerous filaments, shorter than the corolla, and linear, and are inserted into the receptacle of the fructification: the anthers are linear, and are situated longitudinally on the inner side of the filaments: the germinal are numerous, and arranged in a conic form; the styles are short, and the stigmata simple; there is no pericarpium: the seeds are closely arranged together in an imbricated manner; they are numerous,

and terminate each in a squamma of a lanceolated figure, and have an acute angle from the inner side, near the base of the squamma: the base is compressed and acute.

This genus comprehends the *Tulipifera* of authors. There is but one known species of it.

LIRIODENDRUM.

The Tulip-tree.

The tree rises to sixty or seventy feet high, and is very ramose: the leaves are four or five inches long, three broad, and divided into three parts, but with the middle part truncated, or as if cut off: the flowers are an inch and a half long, and an inch in diameter, of a beautiful mixture of a greenish, reddish, and whitish, with some yellow, colour.

The tree is a native of North America; but it is common in our gardens. Catesby calls it, *Tulipifera*; others, *Tulipifera aceris folio*, media lacinia veluti absclisa.

MAGNOLIA.

THE calyx is a deciduous perianthium, composed of three oval, hollow leaves, resembling petals: the corolla consists of nine oblong, hollow, obtuse petals, narrowest toward the base: the stamina are very numerous, short, acuminate, compressed filaments, inserted into the common receptacle of the pistils below the germina: the antheræ are linear, and adhere on each side to the edges of the filaments: the germina are numerous, of an ovato-oblong figure, and cannaliculated receptacle: the styles are bent back and contorted; the stigmata are hairy, and are placed longitudinally on the styles: the fruit is a strobilus, of an oval figure, composed of compressed, roundish, acute, scarcely imbricated, but clustered, capsules; they are sessile, and each is formed of two valves, containing a single cell, and opening outwards: the seeds are single, and kidney-shaped, and hang by filaments from the sinus's of the squammæ of the fruit.

Magnolia corollis amplissima.
The great-flowered Magnolia.

The Laurel-leaved
Tulip-tree.

The root is brachiated; the trunk covered with a pale brown bark: the leaves are ten inches long, and four broad, firm, hard, and like those of our laurel: the flowers are five or six inches in diameter, white, and very fragrant: the fruit is of the bigness of an egg, with a great deal of a beautiful purple in it.

It is a native of many parts of America; we have it in some of our gardens.

The other species are, 1. The long-leaved Magnolia. 2. The short-leaved Magnolia.

UVARIA.

THE calyx is a perianthium, formed of three leaves; the corolla consists of six petals: the stamina are very numerous, and clustered together; the styles are numerous; and the fruit is composed of a multitude of pendulous berries, each containing several seeds.

These characters distinguish the *Uvaria* sufficiently, without any farther description.

ANONA.

THE calyx is a small perianthium, composed of three cordated, hollowed, and acuminate leaves: the corolla consists of six cordated, sessile petals, three alternately interior and smaller; there are scarce any visible stamina, but the antheræ are extremely numerous, and are placed on the sides of the germen: the germen is placed on a roundish receptacle, and is itself of a roundish figure; there are no styles, but a number of obtuse stigmata: the fruit is a very large berry, of a roundish, oval figure, covered with a squamose, punctated bark, and containing only one cell: the seeds are numerous, hard, of an oval, oblong figure, and are placed circularly.

This genus comprehends the *Guaranbanus* of Plumier.

Anona

Anona foliis lineari-lanceolatis.
The lineari-lanceolated-leaved Anona.

The tree grows to a considerable height; the bark is rough and brown; the branches numerous and thick: the leaves are eight inches long, and about two and a half broad, pointed at the ends, and of a firm texture: the flower is small; the fruit is of the size of the largest orange, and covered with a scaly coat.

It is a native of the East and West Indies. C. Bauhine calls it, *Guanabanes* *Oriedi* fructu squammato.

HEPATICA.

THE calyx is a permanent perianthium, formed of three oval leaves, and remote from the receptacle of the corolla: the corolla consists of two or three series of petals; there are three petals in each series, and they are longer than the cup, and of an ovato-oblong figure: the stamina are numerous filaments, thirty, or more, of the length of the cup; the antheræ are didymous and erect: the germina are numerous, twenty, or more; they are oblong and acuminate; there are no styles: the stigmata are obtusely capitated; there is no pericarpium; the receptacle is very small and obtuse, and the seeds are arranged in it in a globular form: they are numerous, oval, but pointed at both ends, and slightly hairy.

Of this genus there is but one known species; but authors have made several, by describing its varieties as such, under the names of the double blue-flowered *Hepatica*; the double red *Hepatica*, and the like.

PULSATILLA.

THE calyx is a uniflorous involucre, placed remote, but proper, and composed of a single leaf, divided into a number of fine narrow segments: the corolla consists of six petals, erect, acuminate, long petals: the stamina are a great number of filiform filaments, of about half the length of the flower: the exterior ones stand lowest; the antheræ are didymous and erect: the germina are numerous; the styles are capillary, longer than the stamina, and permanent: the stigmata are simple; there is no pericarpium: the receptacle is capitated, oblong, tophous, and hairy: the seeds are numerous, compressed, and hairy, and have the styles adhering to them, very long and hairy.

The involucre is the character which distinguishes this genus from the *Anemone*.

Pulsatilla foliis decompositis ternatis.
The Pulsatilla, with ternate, decomposed leaves.

The root is fibrous; the leaves are divided into a multitude of long and narrow segments, in a ternate order; they are of a dusky green, and not glossy: the stalk rises to six or eight inches high, and the flower is large and beautiful; sometimes blue, sometimes red, sometimes white.

It was originally brought from the East into our gardens, where culture has produced a great many varieties of it, which have been described by too many authors, under the names of distinct species, and called *Anemone tenui folio*, *flore duplici*, and the like. C. Bauhine calls this, *Anemone tenui folio*, *simplici flore*; Van Royen, *Pulsatilla foliis ternatis*.

The other species are, 1. The thicker-leaved, large-flowered *Pulsatilla*, or common Pasque flower. 2. The smaller-flowered, thinner-leaved *Pulsatilla*. 3. The smallest-leaved *Pulsatilla*. 4. The broad-leaved, yellow *Pulsatilla*.

ANEMONE.

ANEMONE.

THERE is no calyx: the corolla consists of two or three orders of petals, three in each order or series; they are of an oval figure, and erecto-patent: the stamina are numerous, capillary filaments, of about half the length of the corolla: the antheræ are didymous and erect; the germina are numerous, and collected into a head; the styles are acuminate, and very short; the stigmata are obtuse; there is no pericarpium: the receptacle is globose or oblong, and attenuated and punctated: the seeds are numerous, acuminate, and have the styles affixed to them.

This genus comprehends the Anemone, Anemonoides, and Anemone-Ranunculus of authors; they have endeavoured to distinguish these by the seeds, but there is no such distinction in nature.

1. *Anemone foliis subrotundis et laciniatis, caule uniflora.*

Yellow

The roundish and lacinated-leaved, yellow-flowered Anemone.

Anemone.

The root is tuberous and oblong; the radical leaves are roundish, large, serrated at the edges, of a deep green on the upper part, and purplish underneath: they stand on long pedicles, and are of a firm texture: the stalk rises to six inches high, and has on it three lacinated leaves; and from the origin of these rises also a pedicle, which supports a large, single, yellow flower.

It is a native of Portugal. C. Bauhine calls it, *Anemone cyclaminis five malva folio lutea*; J. Bauhine, *Anemone latifolia flore flavo*.

2. *Anemone seminibus acutis, foliis incis, caule uniflora.*

White-Wood

The acute-seeded, divided-leaved, single-flowered Anemone.

Anemone.

The root is tuberous, oblong, and oblique; the leaves stand on long pedicles, and are divided into five and numerous segments: the stalk is six inches high, and weak; the leaves on it are three, all growing from the same part, and like those of the root: the flower is single; on the summit of the stalk, it is large, and white or reddish.

It is common in our woods. C. Bauhine calls it, *Anemone nemorosa flore albo majore*.

The other really distinct species are, 1. The yellow, wood Anemone, called Wood Ranunculus. 2. The trifoliate, oval-leaved Anemone. 3. The broad-leaved, red Anemone. 4. The rounder, geranium-leaved, large-flowered Anemone. 5. The upright, white, wild Anemone. 6. The large-flowered, five-leaved Anemone. Culture has made an infinite number of varieties in the colour and structure of the flowers of these species, and too many authors have described those varieties as species. Tournefort has no less than a hundred and fifty Anemonies.

A-TRAGENE.

THE calyx consists of four leaves; the corolla is formed of twelve petals; the stamina are very numerous; the styles short; the stigmata small; the seeds are caudate. These short characters sufficiently distinguish the Atragene from all the other plants of this class.

C. LEMATIS.

THERE is no calyx; the corolla consists of four large, oblong petals, of an uncertain shape: the stamina are numerous, subulated filaments, shorter than the corolla: the antheræ adhere to the sides of them; the germina are numerous, roundish, compressed, and terminate in subulated styles, which are a longer than the stamina; the stigmata are simple; there is no pericarpium; the receptacle is capitated and small; the seeds are numerous, roundish, compressed, and have the style adhering to them.

This genus comprehends the Clematis, Flammula, and Viticella of authors. The Clematis has lanceolated petals and seeds, winged with long, hairy setæ; the Flammula has eight pistils, orbiculated seeds, and a very long plume; the Viticella has deltoid petals, and seeds with naked and crooked points: some have five petals.

Clematis foliis pinnatis foliolis ovato-lanceolatis integerrimis. **Erect**
The pinnated-leaved Clematis, with ovato-lanceolated foliola. **Flammula.**

The root is fibrous and white; the stalks are woody, but very slender; they rise to three feet, or more, in height, and support themselves erect; they are hollow and jointed: the leaves are composed of oval, but pointed, pinnules, and are of a blackish green on the upper side, and hoary underneath: the flowers are large and white.

It is a native of Germany. C. Bauhine calls it, Flammula recta; others, Flammula alba erecta.

The other species are, 1. The simple, lanceolated-leaved, blue Clematis. 2. The wild Clematis, called Traveller's Joy and Vienna. 3. The pear-leaved Clematis. 4. The five-leaved, creeping Clematis. 5. The serrated-leaved Clematis. 6. The dwarf Clematis. 7. The blue, erect, larger-leaved Clematis.

THALICTRUM.

THERE is no calyx; the corolla consists of four roundish, hollow, obtuse, deciduous petals: the stamina are numerous filaments, broadest in their upper part, compressed, and longer than the corolla; the anthers are oblong and didymous: the styles are numerous and very short; the germina roundish, one on every style: the stigmata thick; the pericarpium consists of a carinated, sulcated bark, containing only one cell: the seed is single and oblong.

This genus varies greatly in the several species. In some the corolla has five leaves; in some the stamina and pistils are only twelve each: the styles, which are placed under the germina, are in some long, in others short; and in some the cortex of the seed has three longitudinal alæ.

Thalictrum caule foliis fulcato, panicula multiplici
erecta. **Common Meadow Rue.**
The foliis, sulcated-stalked Thalictrum, with a multi-
ple, erect panicle.

The root is composed of a number of long, brown fibres: the plant rises to four feet high; the stalk is hollow, smooth, and ramose; the leaves are divided into a great number of broad and short segments: the flowers are of a mixture of a blackish purple and white; they are small, and stand in great clusters on the tops of the stalks.

The plant is common in our meadows. Authors call it, Thalictrum vulgare.

The other species are, 1. The rugose, trifid-leaved Thalictrum. 2. The glaucous-leaved, yellow Thalictrum. 3. The purple, columbine-leaved Thalictrum. 4. The white, aquilegia-leaved Thalictrum. 5. The dwarf, American Thalictrum. 6. The great, yellow-flowered Thalictrum. 7. The asphodel-rooted Thalictrum. 8. The early, dwarf Thalictrum. 9. The narrow-leaved Thalictrum. 10. The small, broad-leaved Thalictrum. 11. The great, red-leaved Thalictrum. 12. The foetid Thalictrum.

ADONIS.

THE calyx is a perianthium, composed of five obtuse, hollow, somewhat coloured, and deciduous leaves: the corolla consists of five oblong, obtuse, beautiful petals, sometimes there are more than five: the stamina are numerous, very short, subulated filaments: the anthers are oblong and inflexed; the germina are numerous, and collected into a head; there are no styles; the stigmata are acute and reflex; there is no pericarpium: the receptacle is oblong, spicated, and holds five series of seeds: the seeds are numerous, irregular, and angular, gibbous at the base, and their apex reflex and prominent.

Adonis

Adonis radice annua.
Annual-rooted Adonis.

**Red
Poppies.**

The root is fibrous and white; the stalk is erect, thick, and firm, and grows to eighteen inches high. The leaves are divided into fine, long, narrow segments. The flowers stand at the tops of the branches; they are moderately large, and of a very beautiful scarlet colour.

It is a native of most parts of Europe. Authors call it, *Flos Adonis* and *Eranthemum*. Culture makes the flower larger and deeper-coloured.

RANUNCULUS.

THE calyx consists of five oval, hollow, coloured leaves: the corolla consists of five obtuse petals, with small unguis: the nectarium is a cavity in each petal, above the unguis: the stamina are numerous filaments, of about half the length of the flower: the anthers are erect, oblong, obtuse, and didymous: the germina are numerous, and collected into a head: there are no styles; the stigmata are reflex, and very small; there is no pericarpium; the receptacle connects the seeds by means of very minute peduncles: the seeds are numerous, irregular, and have reflex apices.

The essential character of this genus consists in the nectarium, which is in some a simple hollow; in others it is surrounded with a membranaceous edge, and, in some, it is shut up with an emarginated squamula; the other parts of the fructification vary greatly.

This genus comprehends the *Ranunculus*, *Ficaria*, and *Ranunculoides* of authors. In the *Ficaria* the calyx has but three leaves, and the petals are numerous; in one species there are but five stamina.

Ranunculus foliis lanceolatis, caule erecto.
The upright-stalked, lanceolate-leaved Ranunculus.

**Great
Spearwort.**

The root is composed of a cluster of white fibres. The plant rises to three or four feet high. The stalk is round, smooth, thick, and branched. The leaves are a foot long, and about an inch broad, thick, smooth, and pointed. The flowers stand at the tops of the branches; they are yellow, beautiful, and of three quarters of an inch in diameter.

It is frequent in ditches in the Isle of Ely, and other fenny places. C. Bauhine calls it, *Ranunculus longifolius palustris major*; others, *Flammula major*.

The other species of *Ranunculus* are very numerous; those wild in our fields and waters are, 1. The common creeping *Ranunculus*. 2. The bulbous-rooted *Ranunculus*. 3. The erect, pale-leaved *Ranunculus*. 4. The erect, aconite-leaved *Ranunculus*. 5. The little-flowered, annual, field *Ranunculus*. 6. The small-flowered, wood *Ranunculus*. 7. The echinated-seeded, field *Ranunculus*. 8. The round-leaved, water *Ranunculus*. 9. The ivy-leaved, water *Ranunculus*. 10. The various leaved, water *Ranunculus*. 11. The fine-leaved, water *Ranunculus*. 12. The circinnated-leaved, water *Ranunculus*. 13. The fennel-leaved, water *Ranunculus*. 14. The lesser Spearwort. 15. The plantain-leaved *Ranunculus*. 16. The *Ranunculus*, called little Celandine, or Filewort.

The wild *Ranunculi* of other parts of the world are, 1. The grassy-leaved *Ranunculus*. 2. The large-leaved, Apennine *Ranunculus*. 3. The small-flowered, soft-leaved *Ranunculus*. 4. The asphodel-rooted, cyclamen-leaved *Ranunculus*, or *Thora*. 5. The parnassia-leaved *Ranunculus*. 6. The water-calump-leaved *Ranunculus*. 7. The asium-leaved, nodose *Ranunculus*. 8. The apium-leaved *Ranunculus*. 9. The stellated, echinated, Cretic *Ranunculus*. 10. The broad-leaved, bullated, tuberous-rooted *Ranunculus*. 11. The purple-flowered, grumose-rooted, Asiatic *Ranunculus*. 12. The broader-leaved, yellow-flowered, grumose-rooted, Asiatic *Ranunculus*. 13. The rue-leaved, yellow *Ranunculus*. 14. The broad-leaved, Cretic, tuberous-rooted *Ranunculus*. 15. The small-flowered, dwarf, round-leaved *Ranunculus*. 16. The tall, white, hairy *Ranunculus*. 17. The aconite-leaved, white *Ranunculus*. 18. The very broad-leaved, hairy, mountain *Ranunculus*. 19. The fine-leaved, mountain *Ranunculus*.

nunculus. 20. The great-flowered, rock Ranunculus. 21. The purple-flowered, smallage-leaved Ranunculus. 22. The pucedanum-leaved, water Ranunculus. 23. The fennel-leaved, hellebore-rooted Ranunculus. 24. The great-flowered, jointed-stalked, fennel-leaved Ranunculus. 25. The betony-leaved Ranunculus. 26. The bulbous, grassy-leaved Ranunculus. 27. The single-flowered, grassy-leaved Ranunculus. 28. The dwarf, grassy-leaved, white-flowered Ranunculus. 29. The plantain-leaved Ranunculus.

From the Asiatic and some other species of this genus, particularly those from the tenth to the fourteenth of this last division, culture has raised all that beautiful variety of Ranunculus's of our gardens, which are by too many authors called distinct species.

ISOPYRUM.

THERE is no calyx: the corolla consists of five equal, oval, patent, deciduous petals: the nectaria are five; they are equal, tubulated, and very short; their openings are oblique, simple, and situated within the corolla: the stamina are numerous, capillary filaments, shorter than the corolla: the antheræ are simple; the germina are oval; the styles are simple, and of the length of the germina: the stigmata are obtuse, and of the length of the stamina: the fruit is composed of two crooked, lunated pods, containing each only one cell, and in it numerous seeds.

These characters sufficiently distinguish the Isopyrum from all the rest of this class.

HELLEBORUS.

THERE is no calyx: the corolla is composed of five, or more, large, hollowed, roundish petals: the nectaria are five; they are very short, and placed circularly; they are each composed of a single leaf, tubulated, with a ringent mouth, opening inwards, and they are narrowest below: the stamina are numerous, subulated filaments: the antheræ are compressed, narrowest below, and erect: the germina are corniculated, and terminate in subulated styles: the stigmata are thick; the fruit is composed of several compressed, bicarinated capsules; the inferior carina shorter, the upper convex, and opening: the seeds are numerous, round, and affixed to a suture.

The essential character of this genus is in the nectarium; the rest of the parts of fructification vary.

This genus comprehends the Trollius and Aconitum of Rivinus, and the Helleboraster of authors. In the Trollius the petals are numerous and connivent, the nectaria unilabiated. In the Aconitum the petals are six, and deciduous, and the flower stands on a leaf. In the Helleboraster the petals are five, and permanent; the pistils from three to five.

Helleborus scapo bifloro subnudo, foliis pedatis.
The two-flowered Helleborus, with pedated leaves.

**True black
Hellebore.**

The root is black, and composed of a multitude of thick fibres, arising from a small head. The leaves stand on pedicles, of four or five inches long; they are large, and divided to the base, usually into nine segments. The flowers grow on stalks of about four inches high; they are large and white.

It is a native of Germany. C. Bauhine calls it, *Helleborus niger flore roseo*; others, *Helleborus niger verus*.

It's root is the black Hellebore of the shops, a purge and a decoction, good in suppressions of the menses.

The other species are, 1. The great-flowered, wild, black Hellebore. 2. The great, wild Hellebore. 3. The great-leaved Hellebore. 4. The narrow-leaved Hellebore. 5. The great-flowered, autumnal Hellebore. 6. The trifoliate Hellebore. 7. The yellow, dwarf Hellebore, or winter Aconite. 8. The globose-flowered Hellebore, called globose Ranunculus. 9. The smaller-flowered, globose Hellebore.

C A L T H A.

THERE is no calyx: the corolla consists of five large, oval, plane, patent, deciduous petals: the stamina are numerous, capillary filaments; shorter than the corolla: the antheræ are compressed, obtuse, and erect: the germina are from five to ten in number, and are oblong, compressed, and erect: there are no styles; the stigmata are simple: the fruit consists of as many capsules as there were germina; they are short, acuminate, patent, bicarinate, and open at the upper suture: the seeds are numerous and roundish, and adhere to the upper suture.

Of this genus there is but one species.

C A L T H A.

Barth Darygold.

The root is fibrous; the stalk is round, thick, and a foot high. The leaves are two inches broad, crenate at the edges, and roundish. The flowers stand at the tops of the branches, and are very large and yellow.

It is common in our meadows. C. Bauhine calls it, *Caltha palustris*.

Class the Fourteenth.

D I D Y N A M I A.

Plants which have in every flower two effective stamina and two useless ones.

The Didynamia comprehends the labiated and perfonated flowered Plants of Authors.

THE calyx is an erect, tubulated perianthium, formed of a single leaf, divided into five segments, often unequal ones, and permanent: the corolla is monopetalous and erect; the base is tubulated; it contains a honey-juice, and performs the office of a nectarium: the limb is commonly ringent; the upper lip is straight, the lower patent, divided into three segments; the middle one the larger. The stamina are four tubulated filaments, inserted into the tube of the corolla, and reclined towards it's back; two of them intermediate and short, all running parallel, and rarely exceeding the corolla in length: the antheræ are usually hid under the upper lip of the corolla, and connivent. The germen is usually placed above the receptacle: the style is single, filiform, and bent in the same manner as the stamina; it is usually placed between them, and is a little longer than they are, and it's apex is bent; the stigma is usually enarginated. The fruit, if there be any, is usually bilocular: the seeds, if there is no fruit, are four, and are lodged in the bottom of the cup; if there be a fruit, they are more numerous, and are affixed to a receptacle situated in it's center.

These are the characters common to all the genera of this class. After thus delivering them at large here, we shall not repeat them at the head of every genus, but give only, as the general character, the particulars in which each genus differs from all the others; only in the first, the Teucrium, we shall deliver them at large, as a specimen of their general distribution.

The essential character of the class is, that there are four stamina, two of which are shorter than the others, and are placed together, and connivent; and that the style is single, and stands within an irregular corolla.

The genera of this class are very numerous; they may commodiously be divided into two series, according to their wanting, or having, a pericarpium, under the titles of Gymnospermia and Angiospermia; and these, as they have bilabiated or quinquelobed cups, or as their stigmata are simple or double, and their corolla perfonated, patulous, or polypetalous, may be again arranged into several subdivisions.

Class the Fourteenth. Series the First.

DIDYNAMIA GYMNOSPERMIA.

Plants which have two effective stamina and have no capsule for their seeds.

Division the First.

Such as have the calyx divided into five nearly equal segments.

TEUCRIUM.

THE calyx is a permanent perianthium, composed of a single leaf, slightly divided into five segments, and gibbous at the base; the corolla is ringent, and formed of a single petal: the tube is cylindric and short, and terminates in an incurved opening: the upper lip is erect, acute, and deeply divided into two segments, which stand apart; the lower lip is divided into three segments; the lateral ones are of the figure of the upper lip, and somewhat erect; the middle one is much larger, and rounded: the stamina are four subulated filaments, longer than the upper lip of the corolla, crooked and prominent between the division of it: the anthers are small; the germen is divided into four parts; the style is filiform, and like the stamina in figure and situation; the stigmata are two, and slender: the seeds are four, roundish, and lodged in the base of the cup.

This genus comprehends the *Teucrium*, *Polium*, *Scordium*, *Chamædrys*, *Apiga*, *Pseudomarum*, *Iva*, and *Chamæpitys* of authors; all which have been erroneously separated by Tournefort and Rivinus.

In the *Teucrium* the calyx is campanulate, and the middle segment of the lower lip is hollow. In the *Polium* the flowers are collected into clusters, terminating the branches. In the *Chamædrys* the flowers grow from the axils of the leaves, and the calyx is campanulate. In the *Marum* the leaves are short and small, and the smell is acrid. In the *Scordium* there is a strong smell of garlic. In the *Iva* the calyx is very gibbous in the lower part. Such are the distinctions which have been supposed general.

Teucrium foliis ovato-lanceolatis serrulatis, floribus saepius binatis.

The ovato-lanceolate, serrated-leaved Teucrium, with flowers usually binate.

**Water Germander,
or Scordium.**

The root is fibrous; the stalks are square, procumbent, and hairy. The leaves stand in pairs; they are three quarters of an inch long, half an inch broad, and of a pale green colour. The flowers are small and red; they usually grow two together, from the axils of the leaves. The whole plant has a garlic-like smell.

It is a native of England, in wet places, but is not common. Authors call it, *Scordium*, and *Scordium officinarum*.

It is supposed a great alexipharmic, and, as such, is an ingredient in many of the shop compositions.

The other species of *Teucrium* are, 1. Of those called *Teucria* by authors, 1. The sinuated-leaved, shrubby, Batic *Teucrium*. 2. The broader-leaved *Teucrium*. 3. The *Teucrium*, with inflated cups. 4. The perennial, supine, laciniated-leaved *Teucrium*. 5. The annual, laciniated-leaved *Teucrium*.

2. Of those called *Polia* by authors there are, 1. The lavender-leaved *Polium*. 2. The very narrow-leaved *Polium*. 3. The common yellow *Polium*. 4. The common white *Polium*. 5. The long-headed *Polium*. 6. The creeping *Polium*. 7. The erect, maritime *Polium*. 8. The procumbent, sea *Polium*. 9. The purple-flowered, hoary *Polium*. 10. The ground-ivy-leaved *Polium*. 11. The germander-leaved, purple *Polium*. 12. The short-headed *Polium*. 13. The rosemary-leaved *Polium*. 14. The shrubby, narrow-leaved *Polium*. 15. The erect, narrow-leaved *Polium*, with short heads. 16. The toad-flax-leaved *Polium*. 17. The little, procumbent, serrated-leaved *Polium*.

18. The

18. The gnaphalium-like Polium. 19. The broad-leaved, serrated Polium. 20. The serpyllum-leaved Polium. 21. The thyme-leaved, purple Polium, or Teucrium called Polium.

Of the Teucria, called Chamædrys by authors, there are, 1. The common, great Chamædrys. 2. The lesser, creeping Chamædrys. 3. The hairy, Alpine Chamædrys. 4. The baum-leaved, shrubby Chamædrys. 5. The lesser baum-leaved Chamædrys. 6. The Chamædrys, called common Teucrium. 7. The shrubby, Alpine, glossy-leaved Chamædrys. 8. The purple, Cretic, shrubby Chamædrys. 9. The fine-leaved, many-flowered Chamædrys. 10. The pettle-leaved Chamædrys. 11. The hoary, lanceolated-leaved, sea Chamædrys. 12. The multifid-leaved Chamædrys. 13. The prickly, multifid-leaved Chamædrys. 14. The broad-leaved, oriental Chamædrys.

Of those called Ajuga by Rivinus, and by others Bugula, are, 1. The smooth Bugula. 2. The hairy-leaved Bugula. The flowers of both these are naturally blue, but they vary into all the degrees of red and white, and hence authors have made many imaginary species from the varieties of each.

Of the Teucria, called Chamæpitys by authors, are, 1. The serrated-leaved, scented Chamæpitys. 2. The common, or trifid-leaved Chamæpitys. 3. The large, red-flowered, trifid-leaved Chamæpitys.

SATUREIA.

THE calyx of the Satureia is erect, and the segments of the corolla are nearly equal; for the rest see the classical character.

This genus comprehends the Satureia and the Thymbra of Tournefort and others.

1. *Satureia pedunculis bifloris.*

The biflorous, peduncled Satureia.

**Summer
Savory.**

The root is oblong, hard, and woody. The plant rises to a foot high; the stalk is woody: the leaves are near an inch long, very narrow, and somewhat hairy. The flowers stand in the axils of the leaves, two on each peduncle; they are small and whitish; the seeds are brown.

It is a native of the south of France; we have it in our garden. C. Bauhine calls it, *Satureia hortensis*.

It is a carminative, and is kept as such in the shops.

2. *Satureia pedunculis dichotomis.*

The Satureia; with dichotomous peduncles.

**Winter
Savory.**

The root is fibrous: the plant grows to a foot high: the stalks are woody and ramose; the leaves thick-set, very narrow, and of a bright green colour: the flowers are moderately large and white, with a bluish of red.

It is a native of the south of France. C. Bauhine calls it, *Satureia durion*.

It is used in sauces.

The other species of *Satureia* are all called *Thymbra*: they are, 1. The Cretic *Satureia*, or legitimate *Thymbra* of authors. 2. The marjoram-leaved *Thymbra*, called common *Marum*. 3. The round-leaved, Spanish *Thymbra*. 4. The coris-leaved, Spanish *Thymbra*. 5. The spiked *Thymbra*.

LAVANDULA.

THE calyx is of an ovate figure, very slightly dentated at the rim, and supported by a squama. For the rest see the classical character.

Lavandula foliis duplicato-pinnatifidis.

The duplicately pinnatifid-leaved Lavender.

**Jagged-leaved
Lavender.**

The root is hard, woody, oblong, and divaricated: the plant rises to a foot and a half high: the stalks are robust, square, and hairy; the leaves are finely divided into narrow segments, hoary, and very fragrant: the flowers are small and blue; they stand in a spike, like those of Lavender, at the top of a naked stalk.

It

It is common in our gardens. C. Bauhine calls it, *Lavandula folio dissecto*; J. Bauhine, *Lavandula multifido folio*.

The other species of *Lavandula* are, 1. The common Lavender of our gardens. 2. The Arabian *Stachas*. 3. The broad-leaved Lavender. 4. The short-spiked, broad-leaved Lavender. 5. The oblong and serrated-leaved Lavender. 6. The shrubby, broad, crenated-leaved Lavender.

All the species are good in medicine as cephalics and cordials.

HYSSOPUS.

THE lower lip of the corolla has the intermediate segment crenated: the stamina are erect and distant. For the rest see the classical character.

Hyssopus caule acute quadrangulo glabro.

The acutely-quadrangular, smooth-stalked Hyssopus.

The root is a tuft of white fibres: the plant grows to five feet high; the stalk is firm and green: the leaves stand on pedicels, and are of a cordated form, smooth, and sharply serrated at their edges: the flowers are small and yellow, and stand in a kind of square spikes, at the tops of the branches.

It is a native of Virginia. Tournefort calls it, *Sideritis altissima scrophulariæ folio; flore flavescens*.

The other species are, 1. The common Hyssop. 2. The Siberian, large, blue-flowered Hyssop. 3. The lacinated-leaved Hyssop. 4. The myrtle-leaved Hyssop. 5. The tall, hairy Hyssop.

NEPETA.

THE middle segment of the lower lip of the corolla is crenated: the stamina stand close to one another. For the rest see the classical character.

Nepeta foliis sessilibus, nudis, calycibus fructus ovatis aequalibus.

The naked, sessile-leaved Nepeta, with the cups in seed. Tail, white Sideritis.

The root is oblong and fibrous: the plant grows to five feet high: the stalks are square, hairy, and ramose; the leaves are two inches and a half long, an inch and a half broad, serrated, terminating in a point, and of a deep green colour on the upper surface, and hoary underneath: the flowers are large, and of a pale red; they are disposed in a kind of spikes.

It is a native of Spain. J. Bauhine calls it, *Mentha cataria Hispanica, olim Sideritis altissima flore albo*.

The other species are, 1. The common, hoary Nepeta. 2. The interruptedly-spicate Nepeta. 3. The veronica-leaved Nepeta. 4. The common, lesser Nepeta. 5. The narrow-leaved Nepeta. 6. The tuberous-rooted, betony-leaved Nepeta. 7. The lesser, fibrous-rooted, betony-leaved Nepeta.

BETONICA.

THE calyx is aristated: the upper lip of the corolla is plane and emarginated: the tube is cylindric. For the rest see the classical character.

Betonica spicata corollis majoribus. Common, Wood
The spiked Betonica, with larger corolla. Betony.

The root is thick, tuberous, and fibrous; the leaves stand on long pedicels, and are hairy, of a blackish-green colour, and crenated round the edges: the stalks are square, and a foot high; the flowers of a bright red colour, and disposed in short spikes.

It is common in our woods. C. Bauhine calls it, *Betonica purpurea*.

It is a famous cephalic.

The other species of *Betonica* are, 1. The taller, narrower-leaved, white-flowered *Betonica*. 2. The great, broad-leaved, yellow, hairy *Betonica*. 3. The yellowish, white-flowered *Betonica*, called smooth *Sideritis*. 4. The yellow, large-leaved, sea *Betonica*.

SIDERITIS.

THE lower lip of the corolla is trilobous and undivided: the calyx is aristated. The rest see in the classical character.

Sideritis foliis ovato-prælongis superne crenatis.

The oblong, oval-leaved Sideritis, crenated in the upper part.

The root is oblong, woody, and divaricated; the stalks are procumbent, six or eight inches long, square, whitish, and hoary: the leaves stand in pairs; they are oblong, moderately broad, and crenated toward their extremities: the flowers are small, and of a whitish-red colour; they stand in clusters, round the tops of the stalks.

It is a native of France. C. Bauhine calls it, *Sideritis hirsuta procumbens*.

The other species are, 1. The procumbent *Sideritis*, with undivided leaves. 2. The *Sideritis*, with deeply-divided leaves. 3. The hyssop-leaved, Alpine *Sideritis*. 4. The narrow-leaved, Spanish *Sideritis*, called *Tragoriganum*. 5. The narrow-leaved, crenated *Sideritis*. 6. The shrubby, Spanish *Sideritis*. 7. The trifid-leaved *Sideritis*. 8. The procumbent, hyssop-leaved *Sideritis*. 9. The *Sideritis*, called *Marrubiastrum vulgare*, and Alpine triflaginis folio. 10. The *Sideritis*, called the motherwort-leaved *Marrubiastrum*.

MENTHA.

THE corolla is nearly equal, and divided into four segments; the broader segment is emarginated. For the rest see the classical character.

This genus comprehends the *Mentha*, *Menthastrum*, and *Pulegium* of authors.

Mentha floribus spicatis, foliis oblongis serratis.

The spiked-flowered Mentha, with long, serrated leaves. Long-leaved
Peppermint.

The root is white and creeping: the plant grows to two or three feet high: the stalk is square, robust, and ramose; the leaves are two inches and a half long, narrow, sharply serrated at the edges, and of a greyish-green colour: the flowers are small, and of a whitish-red colour; they stand in long spikes, at the tops of the branches.

It grows with us in wet places. C. Bauhine calls it, *Mentha sylvestris folio longiore*; others, *Menthastrum spicatum longifolium*.

The other species of *Mentha* are, 1. The round-leaved *Mentha*. 2. The large, purple-flowered, round-leaved *Mentha*. 3. The verticillate, roundish-leaved *Mentha*. 4. The garden, Basil *Mentha*. 5. The curled, roundish-leaved, spiked, garden *Mentha*. 6. The great, curled-leaved, Danish *Mentha*. 7. The round-leaved, water *Mentha*. 8. The round, rough-leaved, spiked *Mentha*. 9. The hairy, verticillate, field *Mentha*. 10. The narrow-leaved, spiked *Mentha*. 11. The short-spiked, pepper *Mentha*. 12. The broad-spiked, long-leaved, water *Mentha*.

Of those called by authors *Pulegium* there are, 1. The common Pennyroyal. 2. The small, hoary Pennyroyal. 3. The narrow-leaved Pennyroyal. 4. The broad-leaved Pennyroyal.

GLECHOMA.

THE two pairs of the anthers, separately, are arranged in form of crosses.

Glechoma foliis reniformibus crenatis.

The Glechoma, with kidney-shaped, crenated leaves.

Ground
Ivy.

The root is fibrous; the stalks are square, procumbent, and jointed; the leaves are roundish, of a dusky green, hairy, and crenated about the edges: the flowers are moderately large, and of a beautiful blue.

It is common under our hedges. C. Bauhine calls it, *Hedera terrestris vulgaris*.

It varies in the size and figure of the leaves, and colour of the flowers, and has hence been divided by authors into several imaginary species.

ORVALA.

THE upper lip of the corolla is divided into three lobes, each of which is terminated by three points: the lower lip is cordated and crenated.

This genus comprehends the *Papia* of Micheli. There is but one known species of it.

ORVALA.

The root is fibrous; the stalk is robust, and three feet high: the leaves stand in pairs; they have long pedicles; they are two inches and a half long, an inch and a half broad near the base, deeply lacinated at the edges, and terminate in a sharp point: the flowers are large and purple, and stand in clusters at the joints of the stalks.

It is a native of Italy.

AJUGA.

THE upper lip of the corolla is extremely small; for the rest, see the classical character. This genus comprehends the *Bugula* of authors.

Ajuga tetragono-pyramidalis.

The tetragonously-pyramidal Ajuga.

Hairy
Bugle.

The root is fibrous and white; the stalk is square and hairy; the plant grows to a foot and a half high: the leaves stand on long pedicles; they are three inches long, narrow, lightly hairy, and crenated: the flowers are blue, and stand in a lax spike.

It is a native of France and Italy. J. Bauhine calls it, *Consolida media Genevensis*.

The other species are, 1. The common Bugle. 2. The great Alpine Bugle.

LAMIUM.

THE upper lip of the corolla is undivided, and forms a kind of arch: the lower lip is divided into two lobes: the opening has on each side a dentated edge. This genus comprehends the *Lamium* of Tournefort, and the *Galeopsis* of Rivinus.

Lamium foliis floralibus sessilibus amplexicaulibus obtusis.

The Lamium, with the floral leaves sessile, and surrounding the stalks.

The root is fibrous and white; the stalks are square, weak, six or eight inches long, and hollow: the lower leaves have pedicles; they are crenated and pointed; those on the upper part of the stalks meet, and surround it; the flowers grow from the axils of these, and are moderately large, and of a pale red.

It is common in our ploughed fields. C. Bauhine calls it, *Lamium folio caulem ambiens*.

The other species are, 1. The roundish-leaved, purple-flowered *Lamium*, called *Galeopsis*. 2. The lesser, roundish-leaved *Galeopsis*. 3. The oblong-leaved, red-flowered *Lamium*. 4. The common, white *Lamium*. 5. The *Lamium*, with blotched leaves. 6. The pellitory of the wall-leaved *Lamium*. 7. The purple *Lamium*, with finely divided leaves. 8. The common, little, red *Lamium*.

GALEOPSIS.

GALEOPSIS.

THE upper lip of the corolla is crenated and arched: the lower lip is bidentated in it's upper part: the calyx is aristated.

This genus includes the *Cannabis Spuria* of Rivinus, and the *Tetrahit* of Dillenius.

Galeopsis ramis summis strigosis.

Hemp-leaved

The Galeopsis, with the tops of the branches strigose.

Dead-nettle.

The root is fibrous and white; the plant rises to three feet high; the stalk is square, hollow, and ramose: the leaves are two inches long, narrow, hairy, and serrated: the flowers are moderately large, and of a pale red; their cups are prickly.

It is common in our corn-fields. C. Bauhine calls it, *Urtica aculeata foliis serratis*; others, *Cannabis spuria*.

The other species are, 1. The yellow-flowered, hemp-leaved *Galeopsis*. 2. The narrow-leaved *Galeopsis*, with variegated flowers. 3. The purple, spreading, field *Galeopsis*, called *Ladanium segetum*, and *Sideritis rubra*. 4. The betony-leaved *Galeopsis*. 5. The oblong-leaved, yellow-flowered *Galeopsis*, called yellow Dead-nettle. 6. The larger-leaved, yellow *Galeopsis*. 7. The rounder-leaved *Galeopsis*. 8. The teucricium-leaved, shrubby *Galeopsis*.

STACHYS.

THE upper lip of the corolla is arched: the lower lip is reflex, divided into three segments; the middle one largest, reflex, and emarginated.

This genus comprehends some of the *Galeopside*s of Tournefort.

Stachys foliis oblongo-cordatis, floribus verticillatis.

The oblongo cordated-leaved Stachys, with verticillate flowers.

**Base hoary-
bround.**

The root is thick, tuberous, and fibrated; the plant rises to two feet high: the stalk is square, robust, and hoary: the leaves are oblong, crenated, and hoary: the flowers grow in clusters round the stalk, at the upper joints, in such manner as to form a kind of spike; they are moderately large and red.

It is a native of Germany and France. C. Bauhine calls it, *Stachys major Germanica*.

The other species are, 1. The betony-leaved *Stachys*, with variegated flowers. 2. The broad-leaved, smooth, field *Stachys*. 3. The great-spiked, stinking *Stachys*. 4. The marsh *Stachys*, with betony leaves.

BALLOTA.

THE calyx is of a hypocateriform shape, with five indentings at the end, and marked with ten striae: the upper lip of the corolla is crenated.

Of this genus there is but one known species.

BALLOTA.

The root is fibrous; the plant rises to three feet high; the stalks are square, thick, and hairy: the leaves are of a somewhat cordated form, an inch and a half long, and near as much in breadth at the base; of a dusky green, and crenated: the flowers are red, and stand in round clusters at the joints of the stalks.

It is common by way-sides. C. Bauhine calls it, *Marrubium nigrum fortidum*; others, *Ballota*.

MARRUBIUM.

MARRUBIUM.

THE calyx is of a hypocrateriform shape, divided into ten parts at the end, and marked with ten striae: the upper lip of the corolla is bifid and linear. This genus comprehends the Marrubium of Tournefort, and the Pseudo-dictamnus of Rivinus.

Marrubium foliis cordatis, caule fruticoso. **Basard**
The cordated-leaved, shrubby-stalked Marrubium. **Dittany.**

The root is hard, oblong, and brachiated; the plant rises to a foot and half high: the stalks are numerous, square, and hoary; the leaves are three quarters of an inch in diameter, roundish, thick, whitish, and hoary, much resembling those of the Dittany of Crete: the flowers are purple, and stand in round clusters at the joints of the stalk.

It is a native of Crete. C. Bauhine calls it, *Pseudo-dictamnus inodorus*.

The other species are, 1. The common, white Marrubium. 2. The rounder-leaved, white Marrubium. 3. The great, broader-leaved Marrubium. 4. The hairy Marrubium. 5. The narrow-leaved Marrubium. 6. The stellated and aculeated, cupped Marrubium. 7. The procumbent, silvery-leaved Marrubium. 8. The Molucca-capped Marrubium. 9. The curled and rugose-leaved Marrubium. 10. The great, white-leaved Marrubium. 11. The great, blackish, and hairy-leaved Marrubium. 12. The scrophularia-leaved Marrubium. 13. The ground-ivy-leaved Marrubium. The six last are called, by authors, *Pseudo-dictamni*.

LEONURUS.

THE calyx is of a cylindric figure, striated, and terminated by patulous denticulations: the upper lip of the corolla is erect and barbed; the involucrem setaceous.

This genus comprehends the Leonurus and Cardiaca of Tournefort, and the Galeobdolon of Dillenius.

Leonurus foliis tripartitis multifidis linearibus obtusiusculis. **Russian**
The Leonurus, with tripartite, multifid, linear, obtuse leaves. **Motherwort.**

The root is creeping and fibrated; the stalks are numerous, square, hairy, and two feet high: the leaves are somewhat like those of the coronopus, divided into three principal parts, and from these into others; they are of a bright green on the upper surface, and whitish underneath: the flowers stand in thick clusters at the joints of the stalk; they are small and red.

It is a native of Russia. Amman calls it, *Ballote inodora foliis Coronopi*.

The other species of Leonurus are, 1. The common Cardiaca. 2. The smooth-leaved, finely-divided Cardiaca. 3. The great, purple-flowered, sideritis-leaved Leonurus. 4. The smaller-flowered, catamint-leaved Leonurus. 5. The origanum-leaved Leonurus.

PHLOMIS.

THE calyx has five folds or plicæ, and is marked with ten striae: the upper lip of the corolla is incumbent and hairy; the involucrem is foliaceous.

Phlomis foliis cordatis villosis, caule fruticoso. **Sage Bush**
The shrubby-stalked, cordated, hairy-leaved Phlomis. **leim.**

The root is woody and fibrated; the stalks are numerous, woody, square, and whitish: the leaves are very hoary and white, like those of sage, but larger: the flowers

ers stand in round clusters about the upper parts of the stalks; they are large and yellow.

It is a native of Spain. C. Bauhine calls it, *Verbascum latis foliis foliis*.

The other species of *Phlomis* are, 1. The little, purple-flowered *Phlomis*. 2. The smooth, nettle-leaved *Phlomis*; these are both Russian. 3. The narrower-leaved, yellow *Phlomis*. 4. The round-leaved, purple, shrubby *Phlomis*. 5. The pointed-leaved, purple, shrubby *Phlomis*. 6. The purple, clary-leaved *Phlomis*. 7. The very white, shrubby, Spanish *Phlomis*. 8. The very white, herbaceous *Phlomis*.

MOLUCCELLA.

THE calyx is of a campanulated figure, and is larger than the corolla.

Moluccella calycibus septem dentatis.

The Moluccella, with cups indented in seven places.

**Prickly
Molucca.**

The root is fibrous; the stalks are numerous, square, a foot and half high, and ramose: the leaves are of a roundish figure; they stand on long pedicles, and are jagged at the edges: the flowers are red, and stand in clusters in large cups.

It is a native of the Molucca's. C. Bauhine calls it, *Melissa Moluccana ferida*.

The other species are, 1. The sweeter-scented, smooth-cupped Molucca. 2. The shrubby, Sicilian Molucca.

Class the Fourteenth. Order the First.

Division the Second.

Dydinamia Gymnospermia, with bilabiated cups.

O C Y M U M.

ONE of the two lips of the cup is divided into four segments, the other into two. One of the lips of the flower is divided into four segments, the other is undivided.

Ocymum foliis ovatis glabris.

The smooth, oval-leaved Ocymum.

**Great
Basil.**

The root is fibrous; the plant rises to a foot high, or more: the stalk is green and tender: the leaves stand on pedicles, and are oblong, broad, and of a pale green: the flowers are white, or reddish, and are moderately large; they stand in clusters round the tops of the stalks, so as to form a kind of spike.

It is a native of Ceylon, but is frequent in our gardens. C. Bauhine calls it, *Ocymum caryophyllatum majus*.

The other species are, 1. The little, oval-leaved *Ocymum*. 2. The great, sinuated-leaved *Ocymum*. 3. The green, oblong, leaved *Ocymum*. 4. The blackish-leaved, rue *Ocymum*. 5. The citron *Ocymum*. 6. The anise *Ocymum*. 7. The short-spiked *Ocymum*. 8. The narrow, serrated-leaved *Ocymum*. 9. The narrow, bullated-leaved *Ocymum*.

TRICHOSTEMA.

THE upper lip of the corolla is falcated; the stamina are extremely long.

It is a native of North America, described by Gronovius, in his *Flora Virginica*. The characters distinguish it sufficiently, without a description.

T H Y M U S.

THE mouth or opening of the calyx is closed up with hairs. For the rest, see the classical character.

This genus comprehends the Thymus, Serpyllum, and Acinos of many authors.

Thymus verticillis lanuginosis, dentibus calycinis setaceis pilosis.

The Thymus, with woolly verticils, and the denticles of the cup hairy.

**Herb
Bastic.**

The root is oblong, woody, and fibrated; the plant grows to a foot and half high; the stalks are woody, ramose, and durable: the leaves are very small, and resemble those of common Thyme: the flowers are small and white, and are placed in thick clusters around the tops of the stalks.

It is a native of Spain. C. Bauhine calls it, *Sampfuchus sine Marum mastichen redolens*.

The other species of Thymus are, 1. The common, garden Thyme. 2. The broad-leaved Thyme. 3. The capitated, Cretic Thyme. 4. The procumbent Thyme. 5. The capillaceous, hairy-leaved Thyme, with great heads. 6. The dittany-headed Thyme. 7. The smooth, glossy-leaved, sea Thyme. 8. The long-leaved, autumnal, headed Thyme. 9. The broad-leaved, hairy Thyme. 10. The common, wild Thyme. 11. The great-flowered, wild Thyme. 12. The hoary-headed, wild Thyme. 13. The lemon-scented, wild Thyme. 14. The smooth, narrow-leaved Thyme. 15. The hairy, narrow-leaved, wild Thyme. 16. The short-leaved, wild Thyme, called creeping Marum.

M E L I S S A.

THE calyx is of a subcampanulated figure; the upper lip of the corolla is arched, and divided into two parts: the lower lip is divided into three segments, and the middle one is cordated. The rest see in the classical character.

This genus comprehends the Melissa and the Calamint of authors.

Melissa foliis oblongis rugosis hirsutis, corollis longiusculis.

The long-flowered Melissa, with rough, hairy leaves.

**Baum-leaved
Archangel.**

The root is fibrous; the plant rises to a foot and half high: the stalks are square, hairy, jointed, and robust: the leaves are two inches long, an inch and half broad toward the base, rugose, and of a blackish-green: the flowers are long, pendent, and red; they stand three or four together in the axils of every leaf.

It is a native of England, but is not common here. C. Bauhine calls it, *Lamium montanum Melissa folio*.

The other species of Melissa are, of the Baum-kind, 1. The common, garden Melissa. 2. The strong-smelling, lightly-hairy Melissa. 3. The dwarf, broad-leaved, great-flowered Melissa. 4. The great-flowered, narrow-leaved Melissa. 5. The plantain-leaved Melissa.

Of the Calamint-kind there are, 1. The roundish, large-leaved Calamint. 2. The smaller-leaved, strong-smelling Calamint. 3. The tall, dentated-leaved Calamint. 4. The great-flowered Calamint. 5. The small-flowered Calamint. 6. The ocyimum-leaved Calamint. 7. The savory-leaved Calamint. 8. The marum-leaved Calamint. 9. The thyme-leaved Calamint.

C L I N O P O D I U M.

THERE is an involucre, with a multitude of hairs placed under the clusters of flowers. The rest of the parts see in the classical character.

Clinopodium

Clinopodium verticillis densis, foliis subrotundis.
The roundish-leaved, thick-clustered Clinopodium.

**Great, Wild
Basil.**

The root is oblong and oblique: the plant grows to a foot and half high; the stalks are square, slender, and hairy: the leaves are small and roundish; they are hairy, and of a pale green: the flowers are oblong and red; they are placed at the joints of the stalks in large tufts.

It is common in dry places. C. Bauhine calls it, *Clinopodium origano simile*.

The other species are, 1. The taller, large-leaved Clinopodium. 2. The low, smaller-leaved Clinopodium. 3. The basil-like, field Clinopodium. 4. The acinose-leaved Clinopodium. 5. The spicated and verticillate Clinopodium. 6. The hyssop-leaved Clinopodium.

ORIGANUM.

THE Origanum has a square, spiked strobilus, collecting the cups into a head.
 This genus comprehends the Origanum and Majorana of Tournefort.

Origanum foliis subrotundis, spicis confertis glabris. **Wild Mar-**
The round-leaved Origanum, with smooth, confert spikes. **joram.**

The root is fibrous; the stalks are numerous, square, rigid, and two feet high: the leaves are roundish, half an inch in diameter, and of a dark green; the spikes are of a purplish colour, and three quarters of an inch long.

It is frequent with us by road-sides. C. Bauhine calls it, *Origanum vulgare spontaneum*.

The other species are, 1. The procumbent, hairy Origanum. 2. The small-leaved, Crete Origanum. 3. The Origanum onites. 4. The rounder-leaved, pot Marjoram, or the pennyroyal-leaved Origanum. 6. The broad-leaved, smooth, procumbent Origanum. 7. The woolly Origanum, called dittany of Crete. 8. The small-headed Origanum. 9. The shrubby Origanum, with umbellated heads.

Of those called Majorana there are, 1. The common, small Marjoram. 2. The broader-leaved, hairy Origanum. 3. The rounder-leaved, scutellated Origanum. 4. The five-leaved Origanum.

DRACOCEPHALUM.

THE opening or mouth of the corolla is inflated, and the upper lip is hollow and longitudinally connivent.

This genus comprehends also the *Muldavica* and *Pseudo-melissa*.

Dracocephalum floribus verticillatis, serraturis capillacis.
The verticillate-flowered Dracocephalum, with capillary **Turky**
serratures. **Baum.**

The root is fibrous; the stalks are branched, square, and rigid, a foot and half high: the leaves an inch and half long, and about half an inch broad, and finely serrated; they have the smell of Baum: the flowers are blue; they stand at the axis of the leaves in clusters.

It is a native of Turkey. C. Bauhine calls it, *Melissa peregrina folio oblongo*.

The other species are, 1. The American *Dracocephalum* of Breynius. 2. The betony-leaved, blue-flowered *Dracocephalum*. 3. The trifoliate, scented *Dracocephalum*. 4. The spiked-flowered, smooth, whole-leaved, Russian *Dracocephalum*. 5. The small, germander-leaved *Dracocephalum*. 6. The verticillate *Dracocephalum*, with rounded bractes. 7. The betony-leaved *Dracocephalum*, with little, blue, pendulous flowers. 8. The very small-flowered, blue *Dracocephalum*.

HORMI-

HORMINUM.

THE calyx is campanulate, and the upper lip of the corolla is hollow; for the rest, see the classical character. Dillenius makes this but a species of *Melissa*, Hort. Elth. 2. 16; but the cup and upper lip of the corolla distinguish it from that, and all the other genera, so that it needs no farther description.

MELITTIS.

THE upper lip of the calyx is emarginate: the upper lip of the corolla is plane; the lower one crenate. Rivinus has figured this, 1. 29. under the name of *Melissophyllum*. It needs no farther description than this character.

CUNILA.

THE calyx is aristate, and the upper lip of the corolla is arched. This genus comprehends the *Marrubiastrum* of Tournefort. The rest of it's parts see in the classical character.

Cunila calycis labio superiore trifido, inferiore bipartito.

The Cunila, with the upper lip of the cup divided into three, the lower into two parts.

The root is yellowish, woody, and divaricated; the stalk is square, hairy, and a foot and a half high: the leaves are oblong, of a whitish green, and hairy, and lightly serrated toward their extremity; the flowers are very minute, scarce appearing, except on a close examination; they are variegated with purple, yellow, and white.

It is a native of Italy. C. Bauhine calls it, *Sideritis montana parvo variegata flore*.

The other species are, 1. The germander-leaved *Cunila*. 2. The prickly, cupped *Cunila*. 3. The baum-leaved *Cunila*.

BRUNELLA.

THE stamina are bifurcated, and only one of the two points has an anthera on it.

Brunella bracteis cordatis.

The Brunella, with heart-shaped bracteæ.

Self-heal.

The root is fibrous; the stalks are square, rigid, and six or eight inches high: the leaves an inch long, and half an inch, or more, broad, of a blackish-green: the flowers are blue, and stand in thick, short spikes, at the top of the stalks.

It is common by way-sides. C. Bauhine calls it, *Brunella major folio non dissecto*; others, *Brunella vulgaris*.

This species varies greatly: it's flower is sometimes larger than usual; it's leaves are sometimes auriculated, sometimes deeply crenate, and sometimes dissected finely. C. Bauhine and others have made four distinct species of these varieties; and others have greatly farther increased the number, by adding the variations of the flowers into red, white, &c.

The other really distinct species are, 1. The great, broad-leaved *Brunella*. 2. The hyssop-leaved *Brunella*.

SCUTELLARIA.

THE mouth of the calyx is originally open; but, after the flower is fallen, it becomes shut up, as it were, with an operculum.

This genus comprehends the *Callida* of Tournefort.

Scutellaria

Scutellaria foliis subcordatis serratis, spica interrupta.

The subcordate, serrated-leaved Scutellaria, with an interrupted spike.

The root is oblong and oblique; the stalks are square, rigid, and a foot and a half high: the leaves are an inch and a half long, an inch broad, serrated and hairy: the flowers stand in long, loose spikes; they are large and purple.

It is a native of Italy. Columna calls it, Caffida; C. Bauhine, Lamium peregrinum sive Scutellaria.

The other species are, 1. The procumbent, great-flowered Scutellaria. 2. The tall, American Scutellaria. 3. The common, blue-flowered Scutellaria. 4. The little, purple-flowered Scutellaria. 5. The mallow-leaved Scutellaria. 6. The baum-leaved Scutellaria. 7. The origanum-leaved Scutellaria.

PRASIUM.

THE fruit consists of four berries, each containing a single seed. The rest see in the classical character.

Prasium foliis ovato-oblongis serratis.

The Prasium, with oblong, oval, serrated leaves.

The root is oblong, divaricated, and fibrated: the stalks are as thick as a goose-quill, round, but ridged, so as to appear square; they grow to two feet high: the leaves are green all the winter; they are oblong and serrated; the flowers are moderately large and white, variegated with streaks of yellow; they stand in the axils of the leaves toward the tops of the stalks.

It is a native of Sicily and Crete. Morison calls it, Melissa fruticosa teucris facie.

Class the Fourteenth. Order the Second.

DIDYNAMIA ANGIOSPERMIA.

Plants with two effective stamina and with the seeds inclosed in capsules.

Division the First.

Such as have simple stigmata and perforated corollæ.

BARTSIA.

THE calyx is divided into two lobes, and is emarginated and coloured: the corolla is less coloured than the calyx; the upper lip of it is the longer. The rest of the parts see in the classical character. These sufficiently distinguish the Bartsia from all the other genera, even without any farther description.

RHINANTHUS.

THE calyx is divided into four parts, and is ventricose: the capsule is obtuse and compressed. This genus comprehends the Crista galli, the Elephas, and some of the Pedicularæ of Tournefort.

Rhinanthus corollæ labio superiore brevior.

The Rhinanthus, with the upper lip of the corolla shorter.

**Yellow
Rattle.**

The root is oblong, slender, and woody; the stalk is round, rigid, and firm, and grows to a foot high: the leaves are oblong, crenated, and of a dark green; the flowers are numerous, small, and yellow; they stand in long series.

It is common in our meadows every-where. C. Bauhine calls it, *Pedicularis pratensis lutea*, five *Crista galli*.

The other species are, 1. The taller *Rhinanthus*, with hairy cups. 2. The spicated, pale-flowered *Rhinanthus*. 3. The viscous, serrated-leaved *Rhinanthus*. 4. The umbellated, yellow *Rhinanthus*. 5. The narrow-leaved *Rhinanthus*. 6. The oblong, serrated-leaved *Rhinanthus*. 7. The great-flowered *Elephas*, with an erect trunk. 8. The small-flowered *Elephas*, with an erect trunk. 9. The crooked-trunked *Elephas*.

EUPHRASIA.

THE calyx is cylindric, and divided into four segments; the capsule is of an oblong, oval figure.

This genus comprehends the *Euphrasia* of Tournefort, and the *Odontites* of Dillenios.

Euphrasia foliis ovatis acute dentatis. **Common**
The acutely-dentated, oval-leaved Euphrasia. **Eyebright.**

The root is white, oblong, and slender: the stalk is round, thick, rigid, brown, and six or eight inches high: the leaves are half an inch long, oval, of a bluish-green colour, and dentated: the flowers stand all along the tops of the stalks; they are white, and very beautiful, though small.

The plant is common in our meadows. C. Bauhine calls it, *Euphrasia vulgaris*.

The other species are, 1. The taller and more ramose *Euphrasia*. 2. The blue-flowered, tall, simple-stalked *Euphrasia*. 3. The little, yellow, Alpine *Euphrasia*. 4. The *Euphrasia* with finely-divided leaves. 5. The lanceolated, serrated-leaved *Euphrasia*.

MELAMPYRUM.

THE calyx is divided into four parts: the upper lip of the corolla is compressed, and it's edge bent back: the capsule is oblique, and opens on one side.

Melampyrum spicis conicis, laxis, laceris. **Purple-eared**
The Melampyrum, with conic, lax, lacerated spikes. **Cow-wheat.**

The root is oblong, small, and woody: the stalks are hairy, of a purplish colour, and square: the leaves are broad, oblong, and deeply laciniated; those toward the lower part of the stalk narrower, those about the top short, broad, and purplish: the flowers stand among these, and form a kind of spike; they are variegated with yellow and purple.

It is very common in the corn-fields of France, Spain, and Germany. C. Bauhine calls it, *Melampyrum purpurascens coma*; J. Bauhine, *Triticum vaccinium*.

The other species are, 1. The broad-leaved, yellow *Melampyrum*. 2. The purple and white-flowered, crested *Melampyrum*. 3. The narrower-leaved *Melampyrum*. 4. The smaller-leaved, larger-flowered *Melampyrum*.

LATHRÆA.

THE calyx is divided into four parts, and there is an emarginated, depressed gland at the base of the suture of the germen.

This genus comprehends the *Clandestina*, *Phelypea* and *Squammaria*, or *Anblatum*, of Tournefort. Linnaeus has, indeed, separated these into three genera, in his *Genera Plantarum*, but he has since found they are all but one genus.

Lathræa caule simplicissimo, corollis nutantibus, labio inferiore trifido.

The simple-stalked, nodding-flowered *Lathræa*, with the lower lip trifid. Great Toothwort.

The root is white, tender, and succulent, variously divaricated, and formed of a beautiful arrangement of scales: the stalk is five or six inches high, as thick as one's little finger, tender, succulent, brittle, and surrounded by a thin skin; there are membranes, resembling leaves, on the lower part of it, and, on the upper, there is placed a series of large, dusky-coloured flowers, all hanging on one side.

It is found in dark, shadowy lanes. C. Bauhine calls it, *Orobanche radice dentata major*.

The other species of *Lathræa* are, 1. The blue, clustered-flowered, cordate-leaved *Lathræa*. 2. The oblong-leaved *Lathræa*; and, 3. The low, smaller-flowered *Lathræa*.

S W A L B E A.

THE calyx is divided into four segments; the upper segment is very small, the lower one is large and emarginated.

It is an American, described by Cronovius, in his *Flora Virginica*, 71. The division of the cup sufficiently distinguishes it, without a description.

P E D I C U L A R I S.

THE calyx is divided into five parts; the capsule is mucronated and oblique.

Pedicularis caule ramofo, floribus folitariis, calycibus quinquefidis crenatis.

The ramofo, single-flowered *Pedicularis*, with crenated cups.

Red
Rattle.

The root is fibrated and white: the stalks are round, procumbent, and of a purplish colour; the leaves are finely divided, and of a deep green colour: the flowers stand towards the extremities of the stalks; they are small, and of a bright red colour.

The plant is frequent in our meadows. C. Bauhine calls it, *Pedicularis rubra vulgaris*.

The other species are, 1. The taller, erect *Pedicularis*. 2. The short, obtuse-leaved *Pedicularis*. 3. The teucrium-leaved, red, spiked *Pedicularis*. 4. The narrow-leaved *Pedicularis*. 5. The fern-leaved *Pedicularis*. 6. The tuberous-rooted *Pedicularis*. 7. The finely-divided-leaved *Pedicularis*.

T O Z Z I A.

THE calyx is divided into five parts at the extremity; the capsule is globose and onilocular.

Of this genus there is but one known species.

T O Z Z I A.

The root is oblong, moderately thick, squammated, and furnished with a great number of fibres at the bottom: the stalk is square, and a foot high: the leaves are oval; they stand in pairs, and are slightly crenated, and have no pedicles: the flowers grow singly, from the axils of the leaves, on short pedicles; they are small and yellow.

It is a native of Italy. Micheli has figured it under the name of *Tozzia*.

C H E L O N E.

THE calyx is divided into five parts: there is the rudiment of a fifth stamen between the upper ones,

It

It is a native of North America. Gronovius has described it in his Fl. Virg. 71: the rudiment of the fifth stamen, however, sufficiently distinguishes it, without any farther description.

GESNERIA.

THE calyx is divided into five segments, and situated on the germeo: the corolla is crooked.

It is a native of America, described by Plumier, 9. The characters of the calyx and corolla sufficiently distinguish it, without any farther description.

GERARDIA.

THE calyx is divided into five segments: the corolla has two lips; the lower lip is divided into three emarginated lobes, the middle one is also bifid.

This also is an American, described by Plumier, 9. The characters here delivered will distinguish it from all the others of this class, without any farther description.

ANTIRRHINUM.

THE calyx is composed of five leaves: the base of the corolla protuberates downwards, and contains a honey-like juice.

This genus comprehends the Antirrhinum, Linaria, Afarina, Cymbalaria, and Elatine of authors.

1. *Antirrhinum corollis acaudatis, calycibus brevissimis.*
The very short, cupped Antirrhinum, with no tails to the flowers.

Great Snap-
dragon.

The root is white, oblong, and woody; the stalks are numerous, round, rigid, and two feet high: the leaves are an inch and a half long, very narrow, and placed closely on the stalk: the flowers are large, and of a pale red colour; they stand in a kind of spikes, at the tops of the stalks.

It is a native of France, C. Bauhine calls it, *Antirrhinum majus folio longiore*; it is common in our gardens.

2. *Antirrhinum foliis ternis ovatis.*
The ternate, oval-leaved Antirrhinum.

Spanish
Toad-flax.

The root is white, oblong, and thick: the stalks are numerous, a foot high, round, and thick: the leaves stand three at a joint, and are broad, short, and surround the stalk at the base; they are of a bluish-green colour, and flattish; the flowers are purple and yellow.

It is a native of Spain. C. Bauhine calls it, *Linaria triphyllus minor lutea*; others, *Linaria Valentina*.

3. *Antirrhinum caule flaccido, foliis cordatis quinquelobiis.*
The weak-stalked Antirrhinum, with cordated, quinquelobate leaves.

Cymbalaria.

The root is fibrous, the stalks are round, slender, weak, and trailing: the leaves are half an inch broad, of a dark green colour, and divided into five parts: the flowers stand on single, tortuous pedicles, arising from the axils of the leaves; they are small, purple in colour, and have a spur behind.

It is a native of Italy, but grows on the walls of the Thames about London, from the refuse of gardens. C. Bauhine calls it, *Cymbalaria*.

The other species of this genus are very numerous, and have been rendered much more so by authors, who have mistaken varieties for species. The *Afarina* of authors but one species, properly called the round-leaved Antirrhinum.

Those called Antirrhinum by authors are, 1. The common, field Antirrhinum. 2. The little, field Antirrhinum. 3. The yellow Antirrhinum. 4. The broad-leaved, great-

great-flowered Antirrhinum. 5. The hairy, origanum-leaved Antirrhinum. 6. The red valerian-leaved Antirrhinum. 7. The tall, narrow-leaved, Spanish Antirrhinum. 8. The grassy-leaved, small-flowered Antirrhinum.

Those called Linaria are, 1. The broad-leaved, Portugal Linaria. 2. The great-flowered, broad-leaved Linaria. 3. The blue-flowered, three-leaved Linaria. 4. The larger three-leaved Linaria. 5. The daisy-leaved Linaria. 6. The moneywort-leaved Linaria. 7. The auriculated-leaved Linaria: these are called male and female Elatine. 8. The hairy, yellow Linaria. 9. The serpyllum-leaved Linaria. 10. The polygonum-leaved Linaria. 11. The hairy, ternate-leaved Linaria. 12. The polygala-leaved Linaria. 13. The broad-leaved, procumbent Linaria. 14. The common, yellow Linaria. 15. The narrow-leaved, purple and yellow-flowered Linaria. 16. The great, purple, sweet Linaria. 17. The sweet, capillary-leaved Linaria. 18. The narrow, hoary-leaved Linaria. 19. The little, yellow-flowered Linaria. 20. The blue, field Linaria. 21. The four-leaved, yellow Linaria. 22. The little-flowered, fleshy-leaved, procumbent Linaria. 23. The blue, creeping Linaria. 24. The procumbent, four-leaved Linaria. 25. The mollugo-leaved Linaria. 26. The viscous, hairy, sea Linaria. 27. The long-tailed-flowered, narrow-leaved Linaria. 28. The thyme-leaved Linaria.

CYMBARIA.

THE calyx is divided into a great number of linear segments: the rest see in the classical character.

Of this genus there is but one known species.

CYMBARIA.

The root is brown, woody, and creeping: the stalks are slender, round, and five or six inches high: the leaves are oblong, narrow, and very sharp-pointed: the flowers are very large, and yellow; they grow on short pedicles, from the axils of the leaves: the leaves grow sometimes singly, sometimes two together.

The plant is a native of Russia.

Class the Fourteenth. Order the Second.

Division the Second.

Didymia Angiospermia, with the stigma simple and the corolla patulous.

LINNÆA.

THE calyx is double; that of the fruit is composed of two leaves, that of the corolla is divided into five segments, and stands upon the fruit: the corolla is campanulated. These characters sufficiently distinguish it, without a farther description.

CRANIOLARIA.

THE calyx of the flower is double: the perianthium is composed of four leaves, the spathe of one leaf.

It is an American, described by Houston as a species of Martynia, but the characters given here sufficiently distinguish it from that and every other genus.

ÆGINETIA.

THE spathe is formed of a single valve: the base of the corolla is globose, the stigma is also globose, and reflex.

It is an Asiatic, described in the Hortus Mal. 11. 7.

HEBENSTRETIA.

THE calyx is formed into two labia, of which the lower one is the longest: the corolla has only one lip, which is ascendent, and divided into four segments: the capsule contains two seeds.

It is an Asiatic. The characters sufficiently distinguish it.

CRESCENTIA.

THE calyx is divided into two equal parts: the corolla is gibbous; the fruit is a berry on a short pedicle, containing a single cell, and in it many seeds.

It is an American, described by Plumier, 16. The characters sufficiently distinguish it.

HALLERIA.

THE calyx is divided into three segments; the corolla into four: the stamina are longer than the corolla; and the fruit is a berry containing two cells.

LANTANA.

THE calyx is lightly divided at the extremity into four parts: the stigma is uncinated and broken.

This genus comprehends the Camara, Mirobatindum, and Pseudo-viburnum of authors.

Lantana foliis oppositis, caule inermi, spicis oblongis.

The weak-stalked, opposite-leaved, long-spiked Lantana.

The root is brachiated; the stem is angular, weak, and has a pith in it; it rises to three or four feet high: the leaves are two inches long, and, in the broadest part, an inch broad, dentated about the edges, and much resembling those of sage: the flowers are purple, and stand in spikes an inch long.

It is a native of America. Plumier calls it, Camara arborescens foliis folio.

The other species are, 1. The prickly, opposite-leaved Camara, called scarlet Myrobatindum. 2. The larger-leaved Camara. 3. The more hoary Camara. Authors have added another under the name of the round-leaved Myrobatindum, but it is only a variety of the first.

GMEIINA.

THE calyx is obscurely divided into four segments at the edge: the corolla is campanulated, and divided also into four segments: the antheræ are bipartite.

It is a native of Russia; the characters sufficiently distinguish it.

LOESELIA.

THE calyx is divided into four parts: the corolla has but one lip, and that is divided into five segments; against this stand the stamina, which are bent: the fruit is a capsule, containing three cells, and in each several seeds.

It is an American, described by Houlston under the name of Royenia. The characters sufficiently distinguish it, without any farther description.

SELAGO.

THE calyx is divided into four parts; the tube of the corolla is capillary: the limb is nearly equal; the seed is single. The characters sufficiently distinguish it.

PETRÆA.

PETRÆA.

THE calyx is very large, patent, coloured, and divided into five segments: the corolla is also patent, and is of a rotated form.

Petræa foliis rugosis ovatis.
The oval, rugose-leaved Petræa.

The root is brachiated; the shrub rises to ten feet high: the leaves are three inches long, an inch and a half broad, even at the edges, and very rough to the touch: the flowers stand in long, slender spikes; they are small, and of a pale yellowish hue.

It is a native of America.

The other species are, 1. The smaller-leaved Petræa. 2. The larger-flowered Petræa.

CELSIA.

THE calyx is divided into five segments; the corolla is rotated, the stamina are bearded, and the capsule contains two cells. The characters sufficiently distinguish it.

CAPRARIA.

THE calyx is divided into five segments; the corolla is campanulate, ventricose, and divided into five segments: the capsule is formed of two valves; it contains only one cell, and in it a great number of seeds.

This genus comprehends the Samoloides of Boerhaave, and the Ageratum of Tournefort.

Capraria foliis subovatis serratis.
The oval and serrated-leaved Capraria.

The root is yellow, short, and fibrated; the radical leaves are numerous, of an oblong, oval figure, small, and serrated about the edges: the stalks are slender, and hang from out the cracks of the rocks: the flowers are moderately large, of a beautiful purple, and very sweet-scented.

It is a native of Italy. C. Bauhine calls it, *Ageratum serratum Alpinum*.

The other species are, 1. The rapunculus-leaved Capraria. 2. The narrow-leaved, hairy Capraria. 3. The taller Capraria.

DIGITALIS.

THE calyx is divided into five parts; the corolla is of a campanulate form, ventricose, and divided into three segments: the capsule is of an oval figure.

Digitalis foliis calycinis lanceolatis, corollis acutis.

The Digitalis, with the calycine leaves lanceolate, and with
acute corollæ. Yellow
foxglove.

The root is oblong, thick, and fibrated; the stalk is robust, thick, and four feet high: the leaves are six inches long, and near three broad, crenated, of a dark green above, and hairy below: the flowers are small, and of a greenish-yellow; they stand in long series on the tops of the stalks.

It is a native of Italy. C. Bauhine calls it, *Digitalis lutea vel pallida parvo flore*.

The other species are, 1. The common, purple Digitalis. 2. The smaller, purple Digitalis. 3. The oriental Digitalis, called *Sesamum*. 4. The trifid-leaved, white Digitalis. 5. The little Digitalis, called *Gratiola*. 6. The flax-leaved Digitalis. 7. The great-flowered, yellow Digitalis. 8. The narrow-leaved, little-flowered Digitalis. 9. The narrow-leaved, yellow Digitalis. 10. The broad-leaved, brownish-flowered

flowered Digitalis. 11. The narrow-leaved, ferrugineous-flowered Digitalis. 12. The narrow-leaved, purple Digitalis. 13. The very narrow-leaved, blackish-flowered Digitalis.

BIGNONIA.

THE calyx is of a cyathiform figure, and is divided into five segments: the mouth of the corolla is campanulated, and divided into five segments: the fruit is a pod, containing two cells: the seeds are membranaceous.

This genus comprehends the Bignonia of Tournefort, and the Pseudo-gelsemium of Rivinus.

*Bignonia foliis pinnatis, foliolis incisis, geniculis
radicatis.*

The pinnated-leaved Bignonia, rooting at the
joints.

The scarlet,
Trumpet-flower.

The root is brachiated; the stem is slender, tortuous, ramose, and twelve feet, or more, in length; it needs support, and infixes it's roots from every joint, where it touches any thing: the leaves are pinnated, and seven inches long; the pinnæ three quarters of an inch long, half an inch broad, and serrated: the flowers stand four or five together, and are very large, and of a beautiful scarlet.

It is a native of America. Cornutus calls it, Gelsemium Indicum; others, Bignonia fraxini folio.

The other species are, 1. The yellow-flowered, ash-leaved Bignonia. 2. The short-podded Bignonia. 3. The very long-podded, yellow Bignonia. 4. The broad-podded Bignonia. 5. The violet-flowered, bifoliate Bignonia. 6. The box-leaved Bignonia. 7. The undulated-leaved Bignonia. 8. The cordated-leaved Bignonia. 9. The long, single-leaved Bignonia. 10. The five-leaved, red-flowered Bignonia.

CITHARESEYLON.

THE calyx is campanulated, and divided into five segments: the corolla is infundibuliform and rotated: the segments are hairy above, and equal.

These characters sufficiently distinguish it, without a farther description.

MARTYNIA.

THE calyx is divided into five segments: the corolla is campanulated, gibbous at the base, and contains a honey-juice there; the stamina are bent among one another, and there is a rudiment of a fifth between the upper ones.

Martynia foliis ovato-lanceolatis.
The ovato-lanceolate-leaved Martynia.

The root is tuberous and jointed: the stalk is round, thick, and spotted: the leaves are four inches long, and three broad, at the base: the flowers are an inch long, and near as much in breadth; they are of a beautiful blue.

It is a native of America; we have it in our stoves.

The other species are, 1. The larger-leaved, purple Martynia. 2. The white Martynia, with a long tube. 3. The divided-leaved Martynia.

SCROPHULARIA.

THE calyx is divided into five parts: the corolla is of a globose figure; it's upper lip is bent downwards.

Scrophularia

Scrophularia foliis cordatis, pedunculis solitariis multifloris.
The cordated-leaved Scrophularia, with single, many-
flowered peduncles.

Yellow
Figwort.

The root is tuberous and white: the stalk is square; the leaves stand two at a joint, and are broadest near the base, and terminate in a point, from the ala of each rises a peduncle which supports several flowers; these are small and yellow.

It is a native of Italy, but is not common. C. Bauhioe calls it, *Scrophularia flore luteo*.

The other species are, 1. The common, knobby-rooted Scrophularia. 2. The great, hairy Scrophularia. 3. The water Scrophularia. 4. The nettle-leaved Scrophularia. 5. The baum-leaved Scrophularia. 6. The betony-leaved Scrophularia. 7. The shrubby, teucrium-leaved Scrophularia. 8. The smooth, elder-leaved Scrophularia. 9. The yellow Scrophularia, with thick, roundish leaves. 10. The fern-leaved Scrophularia. 11. The shining, rock Scrophularia. 12. The five-leaved Scrophularia. 13. The shrubby, vervain-leaved Scrophularia.

BESLERIA.

THE calyx is divided into five segments: the fruit is a berry of a globose form, containing several seeds.

It is an American, described by Plumier, 5. These characters sufficiently distinguish it, without a farther description.

CORNUTIA.

THE calyx has five indentings at the edge: the stamina are longer than the corolla: the fruit is a berry, containing only a single seed.

This is an American also, described by Plumier, 17. Its characters sufficiently distinguish it.

BROWALLIA.

THE calyx has five indentings at the extremity: the corolla is patent, and is divided into five equal segments at the edge: the umbilicus is closed by the two large anthers. Of this genus there is but one known species.

BROWALLIA.

The root is fibrated; the plant grows to a foot and a half high: the leaves are placed alternately, they are oval, rough, and stand on pedicles: the flowers stand singly on peduncles, arising from the ala of the leaves: they are blue, and the upper segment has a spot of yellow.

It is a native of South America.

ERINUS.

THE calyx is composed of five leaves: the limb of the corolla is divided into five equal, emarginated segments.

It is an American. The characters sufficiently distinguish it.

BUCHNERA.

THE calyx has five obscure indentings at its edge; the corolla has five equal and obversely cordated segments at its edge. These characters sufficiently distinguish it.

LIMOSELLA.

THE calyx is divided into five segments at the edge: the corolla is also divided into five equal segments: the capsule is formed of two valves; it contains a single cell, and in it several seeds.

This genus comprehends the Plantaginella of Dillenius. There is but one known species of it.

LIMOSELLA.

The root is small, oblong, and fibrated: the leaves are numerous; they are placed on long pedicles, and are oblong and pointed. In the midst of these rises a single stalk, very slender, and about an inch high, on which stands one small, white flower.

It is common with us in muddy places. C. Bauhine calls it, Plantaginella palustris.

Class the Fourteenth. Order the Second.

Division the Third.

Didynamia Angiospermia, with double stigmata.

OBOLARIA.

THERE is no calyx: the corolla is campanulated, and divided into four segments at the edge; the fruit is a capsule, formed of two valves, and containing several seeds. The characters distinguish it sufficiently.

OROBANCHE.

THE calyx is divided into four parts; the corolla is ringent: the capsule is formed of two valves; it contains a single cell, and in it several minute seeds.

Orobanche caule simplici, corollis majoribus.

The large-flowered, simple-stalked Orobanche.

Broom-rap.

The root is fibrous; the plant grows to a foot and a half high: the stalk is simple, very thick, of a brown colour, and ornamented with a few membranes instead of leaves; it is bulbous at the base, and at the top forms a spike of flowers; these are of a yellowish-brown, wide and gaping. The whole plant is of the same general, tawny, or yellowish-brown colour, and it has no leaves.

It is common in our broom-fields, and sometimes in places where there is none of that shrub. J. Bauhine calls it, Orobanche flore majore.

The other species are, 1. The great, stinking Orobanche, with smaller flowers. 2. The purple-flowered, lesser Orobanche. 3. The small-flowered Orobanche. 4. The blue-flowered Orobanche. 5. The small-flowered, ramose Orobanche. 6. The dusky-branched, American Orobanche.

LIPPIA.

THE calyx is roundish, and has four indentings at the edge; it is erect, compressed, and membranaceous: the capsule is covered: it is formed of two valves; it contains only one cell, and in it two seeds.

It is an American, described by Houston. These characters sufficiently distinguish it.

MIMULUS.

THE calyx is of a prismatic figure, and has four indentings at its edge: the corolla is ringent, and its upper lip is folded back at the sides: the capsule contains two cells, and each several seeds. There is but one known species of this genus.

MIMULUS.

MIMULUS.

The root is creeping; the plant rises to two feet high; the stalk is robust, smooth, and square; the leaves stand two at a joint; they have no pedicles, but embrace the stalk at their base; they are oblong and narrow: the flowers are large, and of a beautiful blue; they stand on pedicles arising from the axils of the leaves.

It is a native of Virginia. Ray calls it, *Digitalis perfoliata glabra flore violaceo minore*; Morison, *Digitalis Lyfimachiae facie*.

BONTIA.

THE calyx is divided into five segments: the lips of the corolla are bent back; the fruit is a drupe of an oval figure, containing only a single seed.

It is an American, described by Plumier, 23. Its characters sufficiently distinguish it.

SESAMUM.

THE calyx is divided into five segments: the corolla is of a campanulated form, and divided also into five segments, the lowest of which is the largest: the segments are of a lanceolated figure, and the capsule contains four cells. Of this there is but one known species.

SESAMUM.

The Oily Grain Plant.

The root is oblong and fibrated: the stalk is single, robust, firm, a foot and a half high, and fleshy: the leaves stand on long pedicles; they are oblong, narrow, and serrated: the flowers are very large, of a beautiful blue on the outside, and white within; they resemble those of the foxglove in shape, and they stand on pedicles arising from the axils of the leaves.

It is a native of the East. Its seeds, and an oil extracted from them, were once kept in our shops; now both are unknown there.

DODARTIA.

THE calyx has five indentings at its edge, the lower lip of the corolla is twice as long as the other: the capsule is of a globose figure, and contains two cells.

It is an oriental, of which there is only one known species. The characters sufficiently distinguish it.

RUELLIA.

THE calyx is divided into five parts; the corolla is of a somewhat campanulated figure: the capsule bursts open, when ripe, by means of certain elastic denticles.

It is an American. There are two species; one a native of Virginia and Carolina, the other of Barbadoes. The former has a great many flowers on one common peduncle, the other only three.

BARLERIA.

THE calyx is divided into five parts; two of the stamina are vastly smaller than the others: the capsule is formed of two valves, it is of a quadrangular figure, and contains only one cell: it is elastic without the ungues, or denticles of the Ruellia.

It is an American, described by Plumier 3. 31. The characters sufficiently distinguish it.

OVIDEA.

THE calyx is divided into five segments: the tube of the corolla is cylindric, and extremely long: the fruit is a globose berry, containing two seeds.

It is an American, described by Plumier under the name of *Valkia*. The characters sufficiently distinguish it.

COLUMNEA.

COLUMNEA.

THE calyx is divided into five segments: the upper lip of the corolla is arched and undivided: the fruit is a globose berry, containing two cells, and in each several seeds.

It is an American, described by Plumier, 39. The characters sufficiently distinguish it.

CLERODENDRUM.

THE calyx is of a campanulated form, and divided into five segments; the tube of the corolla is filiform: the limb is divided into five equal segments: the stamina are extremely long; they stand wide apart between the segments of the corolla: the fruit is a berry. Of this there is but one known species.

CLERODENDRUM.

The root is yellow and fibrated: the shrub rises to three feet high; the stem is brittle, and appears square: the leaves are four inches long, and three broad: the flowers stand on long pedicles at the tops of the branches; they are large and white.

It is a native of Malabar, and is described in the Hort. Mal. under the name of Perager.

VOLKAMERIA.

THE calyx is divided into five segments: the tube of the corolla is capillary, and its limb is divided also into five equal segments: the stamina are long and separate; the fruit is a dry capsule, containing two seeds.

It is an American. The characters sufficiently distinguish it.

VITEX.

THE calyx is terminated by five indentings: the corolla is divided into six segments at the extremity; the fruit is a berry, containing four seeds.

Vitex foliis angustioribus.

The narrower-leaved Vitex.

**The Chaste
Tree.**

The root is brachiated; the shrub rises to four or six feet high; the bark is greyish; the leaves stand on long pedicles, and are divided deeply into five segments, so as to appear digitated: the flowers are small and reddish; they stand in spikes.

It is a native of France. C. Bauhine calls it, *Vitex foliis angustioribus cannabis more dispositis*.

The other species are, 1. The narrow-leaved Vitex, with small, blue flowers. 2. The broad-leaved, serrated Vitex. 3. The dwarf, very narrow-leaved Vitex.

ACANTHUS.

THE calyx is composed of three pairs of leaves: the corolla has but one lip, which is bent downward, and divided into four segments: the capsule contains two cells.

Acanthus foliis sinuatis inermibus.

The Acanthus, with sinuated leaves, without prickles.

**Common
Bear's-breech.**

The root is oblong, thick, and fibrated; the plant rises to three feet high; the stalk is round, green, and thick: the leaves are ten inches long, and four or five wide, of a beautiful green, and deeply sinuated at the edges: the flowers are large and white, and stand in a spike at the top of the stalk.

It

It is a native of Italy. C. Bauhine calls it, *Acanthus sativus*, five *Mollis Virgili*. The other species are, 1. The prickly *Acanthus*. 2. The *Acanthus*, with few, and those short, spines.

Class the Fourteenth. Order the Second.

Division the Fourth.

Didynamia Angiosperma, with corollæ composed of numerous petals.

MELIANTHUS.

THE calyx is composed of five leaves, the lower one of which is gibbous: the corolla is composed of four petals, and has a nectarium between the two lowest: the fruit is a capsule containing four cells.

Meliantbus foliis pinnatis, foliolis serratis.

The pinnated-leaved Melianthus, with serrated pinnule.

The root is oblong, woody, slender, and fibrated: the plant grows to six inches high: the leaves stand on long pedicles; they are composed of several pairs of pinnæ, which are short, broad, serrated, and obtusely pointed: the flowers stand in spikes, of a brownish colour, and three quarters of an inch long, and have a quantity of a sweet honey-juce at their base.

It is a native of Virginia. Tournefort calls it, *Meliantbus Americanus minor*.

The other species are, 1. The great, African, spiked *Meliantbus*. 2. The procumbent, pimperl-leaved, African *Meliantbus*.

Class the Fifteenth.

TETRADYNAMIA.

Plants which have in every flower four efficacious stamina.

THIS class comprehends the *Herbæ flore cruciformi* of Tournefort, and the *Herbæ tetrapetalæ siliquosæ et siliculosæ* of Ray.

The classical character shall be delivered here at large, as in the former class, and the distinctive characters only mentioned under the several genera, as in that class: the common characters of them all may, therefore, be referred to in this place.

The calyx is an oblong perianthium, composed of four leaves; these are of an oblong, oval figure, hollow, obtuse, and connivent; they are deciduous; the opposite ones are equal, and the base is gibbous downwards: the calyx is, in this class, the nectarium, and it is, therefore, that it is made gibbous in this part. The corolla consists of four petals, equal in size, and arranged in form of a cross: their ungues are plano-fusulate, erect, and somewhat longer than the calyx: the limb is plane; the bractæ are broadest in the outer part, and are obtuse, and scarce touch one another at the sides: the insertion of the petals is in the same circle with the stamina. The stamina are six erect, fusulated filaments: two of these, placed opposite, are of the length of the cup; the other four are something longer, and are, however, shorter than the corolla: the antheræ are oblong, and acuminate; they are thickest at the base, erect, and have their apices turned outwards. The gland of the nectarium is very variously formed, and situated, in the different genera; it is affixed often to the base of the stamina, particularly of the two shorter ones, and they are often bent so as not to press upon it; and, from that circumstance alone, become shorter than the others. The germen is situated on the receptacle, and grows continually longer and longer: there is either no style, or one that is of the length of the longer stamina: the stigma is obtuse. The fruit is a pod, composed of two valves, and often containing two cells; it splits, when ripe, from the apex to the base, and has often the dissipimenum prominent at it's apex, beyond the valves: this has before performed the office of a style. The seeds are round and nutant; they are arranged alternately and longitudinally in the pods: the

receptacle is linear, and surrounds the dissepimentum, and is immersed in the sutures of the pod.

Such are the classical characters of the Tetradynamia, common to all the genera, and, therefore, not necessary to be repeated under every generical name.

The Tetradynamia have some of them roundish pods, with the style adhering to them, often equal to the pod itself in length: others of them have very long pods, without this addition of a long style to them.

They are hence naturally arranged into two orders; the one containing those with the round pods, under the title of Siliculose; the other, those with the long pods, under that of Siliquose.

Class the Fifteenth. Order the First.

TETRADYNAMIA SILICULOSA.

Plants which have four efficacious stamina and roundish, or short, pods.

MYAGRUM.

THE pod is terminated by a conic style, and the cell contains usually only one seed. This genus comprehends the Myagrum, and some of the Alyssa, of Tournefort.

Myagrum filiculis obverse cordatis subsessilibus, foliis amplexicaulis.

The cordated, sessile-podded Myagrum, with leaves embracing the stalks.

The root is oblong, thick, and fibrated: the stalks rise to two feet high, or more; the leaves are large, broadest at the base, somewhat laciniated at the edges, and of a bluish-green colour: the flowers are small and yellow.

It is common in corn-fields in most parts of Europe. C. Bauhine calls it, Myagrum monospermum latifolium.

The other species are, 1. The smaller Myagrum, with large flowers. 2. The narrower-leaved Myagrum. 3. The hairy, short-leaved Alyssum. 4. The longer-leaved, hairy Alyssum. 5. The sea Alyssum.

ANASTATICA.

THE pod is blunt, and coronated with a margin: the style is intermediate, mucronated, and oblique: the cell contains but a single seed.

Of this genus there is but one known species.

ANASTATICA.

Rose of Jericho.

The root is woody, oblong, and simple: the stalks are numerous, woody, and six or seven inches long, very ramose, and of a greyish colour: the leaves stand singly; they are an inch and a half long, half an inch broad, serrated at the edges, and of a greyish-green colour, and hairy: the flowers are small and white; they stand in clusters, at the divarications of the branches.

It grows wild about the shores of the Red Sea. When the seeds are ripe, the branches draw up and contract, so that the whole plant forms a kind of a ball, or globular body, which will expand on laying it a little while in warm water.

SUBULARIA.

THE pod is of an obversely cordated figure, and entire: the valves are oval and hollow, and stand contrary to the dissepimentum.

Subularia

*Subularia erecta foliis rigidissimis.**The erect, rigid-leaved Subularia.*

The root is fibrous and white: the leaves are four inches long, rounded, as thick as a common rush, and terminate in a point at the extremities: the flowers are small and white; the seeds numerous and yellow.

It grows on the mud, in the bottoms of our mountainous lakes in Wales. Ray calls it, *Subularia lacustris*, seu *Calamistrum herba aquatica-Alpina*.

The other species are, 1. The creeping, softer-leaved *Subularia*. 2. The long-leaved, brittle *Subularia*. 3. The soft, and thicker-leaved *Subularia*. 4. The largest *Subularia*, with the leaves hollowed within.

LEPIDIUM.

THE pod is somewhat obversely cordated; its valves are hollowed, and it contains several seeds.

This genus comprehends the *Lepidium* and the *Nasturtium* of authors.

*Lepidium foliis integris ovato-lanceolatis.**The ovato-lanceolate, undivided-leaved Lepidium.*

The root is fibrous: the plant rises to three feet high: the stalk is round, smooth, of a pale green colour, and firm: the leaves are four inches long, and two and a half broad, of a bright green colour, and even at the edges: the flowers stand in vast clusters, at the tops of the branches; they are small and white.

It is a native of England, but not very common. C. Bauhine calls it, *Lepidium latifolium*.

The other species are, 1. Of those called *Lepidia* by Tournefort, 1. The dwarf, hairy *Lepidium*, or large *Draba*. 2. The dwarf, less hairy, Syrian *Lepidium*, called lesser *Draba*, and broad-leaved *Iberis* by some. 3. The grassy-leaved *Lepidium*, called common *Iberis*. 4. The shrubby, capillaceous-leaved, Spanish *Lepidium*.

Of those called *Nasturtium* there are, 1. The common, garden *Nasturtium*, or garden Cress. 2. The narrower-leaved, garden Cress. 3. The broad-leaved, garden *Nasturtium*. 4. The unbellated, garden *Nasturtium*. 5. The fine divided-leaved *Nasturtium*. 6. The perfoliate and fine divided-leaved *Nasturtium*. 7. The rough-podded *Nasturtium*, or *Coronopus Ruellii*. 8. The little *Nasturtium*, with finely-divided leaves. 9. The dwarf, cardamine-leaved *Nasturtium*. 10. The shepherd's-purse-leaved, dwarf *Nasturtium*. 11. The dwarf, vernal *Nasturtium*, with no leaves on the stalk.

COCHLEARIA.

THE pod is of a somewhat heart-like figure, turgid and scabrous: the valves are gibbous.

*Cochlearia foliis ovato-lanceolatis sinuatis.**The Cochlearia, with ovato-lanceolate, sinuated leaves.**Sea Pursley.*

The root is fibrous: the stalks are striated, oblique, and eight or ten inches high: the leaves are 10 inch long, half an inch broad, sinuated at the edges, and pointed at the ends: the flowers are small and white, and stand in considerable number toward the tops of the stalks.

It is common on our sea-coasts. C. Bauhine calls it, *Cochlearia folio sinuato*.

The other species are, 1. The round-leaved *Cochlearia*. 2. The great, erect, long-leaved *Cochlearia*. 3. The ivy-leaved *Cochlearia*. 4. The pale red-flowered *Cochlearia*. 5. The procumbent, Danish *Cochlearia*. 6. The little, erect, Danish *Cochlearia*. 7. The wood-leaved *Cochlearia*; and, 6. The *Cochlearia* commonly called *Horseradish*.

THLASPI.

THLASPI.

THE pod is narrowest at the base, and emarginated; the valves are navicular, the seeds numerous.

This genus comprehends the *Thlaspi* and the *Bursa pastoris* of authors.

Thlaspi filiculis orbiculatis, foliis oblongis dentatis glabris.
The orbiculated-podded Thlaspi, with oblong, smooth, den-
tated leaves.

Treacle
Mustard.

The root is oblong, slender, white, and fibrated: the stalk is round, erect, branched, and is ten inches high: the leaves stand singly on it, without pedicles; they are an inch long, half an inch broad, of a pale green colour, and notched at the edges: the flowers are tolerably large and white; the pods very large and broad.

It is a native of our corn-fields. C. Bauhine calls it, *Thlaspi arvense siliquis latis*.

It's seeds should be used in some of the compositions of the shops, but those of the common garden Cress are usually sold in their stead.

The other species are, 1. The sagittated and dentated-leaved *Thlaspi*, called common *Thlaspi*. 2. The umbellated *Thlaspi*. 3. The great and little perfoliate, field *Thlaspi*, for they are only varieties of the same species. 4. The hoary, smaller-leaved *Thlaspi*. 5. The shorter-leaved *Thlaspi*. 6. The narrow and thick-leaved *Thlaspi*. 7. The very narrow-leaved, clustered *Thlaspi*. 8. The daisy-leaved *Thlaspi*. 9. The common shepherd's-purse; from the varieties of which have been made, by authors, many species.

IBERIS.

THE corolla is irregular; the two exterior petals are the larger.

Iberis foliis lanceolatis acuminatis inferioribus serratis.
The Iberis, with lanceolated and acuminate leaves, the lower
ones serrated.

Candy
Tuft.

The root is oblong, thick, and white: the plant grows to a foot high: the stalks are round and ramose, large, and of a pale green colour; the leaves are oblong, pointed, and of a dusky green: the flowers are large, and of a beautiful red, sometimes white; they stand in umbels, on the tops of the stalks.

It is a native of Crete; it is very common in our gardens. C. Bauhine calls it, *Thlaspi umbellatum Creticum Iberidis folio*.

The other species are, 1. The shrubby, leucosium-leaved *Iberis*. 2. The field *Iberis*, with umbellated flowers. 3. The narrow-leaved, purple, umbellated *Iberis*. 4. The acute-leaved *Iberis*.

BISCUTELLA.

THE pod is bilobous, rounded, and compresso-plane: the leaves of the calyx are gibbous at the base.

This genus comprehends the *Thlaspidium* of Tournefort and Rivinus.

Biscutella siliquis orbiculato-didymis a stylo debiscentibus.
The Biscutella, with orbiculated, didymous pods, splitting from
the style.

Butcher
Mustard.

The root is oblong, white, and fibrated: the stalks are numerous, slender, and eight or ten inches high: the radical leaves are numerous, three inches long, and about half an inch broad, serrated at the edges, and a little hairy: the stalks have three or four leaves to them; they are oblong, narrow, and hairy: the flowers are small and yellowish; they stand in clusters, at the tops of the stalks; the pods are beautiful, broad, peltate, and foliaceous.

It is a native of France and Italy. Clusius calls it, *Thlaspi clypeatum*.

The

Clafs 14 & 15 Didynamia 8. Tetradynamia. Plana. P. 500.



14

Cymbaria



15

Thlaspi





The other species are, 1. The hairy *Biscutella*, with a spur to the flower. 2. The rough, pale yellow-flowered *Thlaspidium*. 3. The radish-leaved *Thlaspidium*. 4. The leucocium-leaved, ever-flowering *Thlaspidium*. 5. The shrubby, narrow-leaved *Thlaspidium*. 6. The alkanet-leaved *Thlaspidium*. 7. The spiked *Thlaspidium*. 8. The narrow-leaved, smooth *Thlaspidium*. 9. The little, rough *Thlaspidium*, or *Biscutella*.

CLYPEOLA.

THE pod is of an orbiculated figure, undivided, and compresso-plane. This genus contains the *Ionthlaspi* of Tournefort and others.

Clypeola filiculis unilocularibus monospermis. Clypeated
The *Clypeola*, with pods with single seeds in them. Bursard.

The root is oblong, white, and fibrated: the stalks are numerous, rough, procumbent, and five or six inches long: the leaves are numerous, very small, hoary, and white: the flowers are very small and yellow: the pods form a kind of spike half-way down the plant.

It is a native of France and Italy. C. Bauhine calls it, *Thlaspi Clypeatum serpylli folio*; Columna, *Ionthlaspi*.

The other species are, 1. The shorter-leaved, yellow *Clypeola*. 2. The oblong-leaved *Clypeola*.

ALYSSUM.

THE two shorter stamina in the flower have a denticulation on their inner side. This genus comprehends the *Alyson*, *Alyssoides*, and *Vesicaria* of Tournefort.

Alyssum ramulis suffruticosis diffusis, foliis punctato-ecbinatis.
The diffuse-stalked, shrubby *Alyssum*, with punctato-ecbinated leaves.

The root is long, white, and woody: the stalks are numerous, seven or eight inches long, rough, and of a greyish-green colour: the leaves are oblong, narrow, punctated, and very rough to the touch: the flowers are moderately large and yellow.

It is a native of Italy. C. Bauhine calls it, *Thlaspi montanum luteum*.

The other species of *Alyssum* are, 1. The great, short-leaved *Alyssum*. 2. The little, hoary, *serpyllum*-leaved *Alyssum*. 3. The maritime *Alyssum*. 4. The halimus-leaved *Alyssum*. 5. The narrow, silvery-leaved *Alyssum*. 6. The prickly, shrubby *Alyssum*. 7. The shrubby, hoary *Alyssum*. 8. The large, yellow-flowered *Alyssum*. 9. The polygonum-leaved, hoary *Alyssum*. 10. The veronica-leaved *Alyssum*. 11. The acute, auriculated-leaved *Alyssum*. 12. The great-fruited, auriculated-leaved *Alyssum*. 13. The trifid-leaved, mountain *Alyssum*. 14. The green, leucocium-leaved *Alyssum*. 15. The hoary, sinuated-leaved *Alyssum*. 16. The dentated-leaved, oriental *Alyssum*, or *Vesicaria*.

LUNARIA.

THE pod is of an elliptic shape, and compresso-plane: the valves are equal to the dissepiment, and parallel.

Lunaria foliis ovato-lanceolatis serratis. Honesty.
The ovato-lanceolated, serrated-leaved *Lunaria*.

The root is composed of a number of tuberosities: the stalk rises to two feet high: the leaves are somewhat like those of the common nettle, broad, serrated, and hairy: the flowers stand in considerable numbers, on the upper part of the stalks; they are small, and of a purplish colour: the pods are very broad, and of a silvery-white.

It is a native of Italy and Germany. C. Bauhine calls it, *Viola Lunaria major siliqua rotunda*.

The other species are, 1. The broader-leaved, white-flowered *Lunaria*. 2. The narrower-leaved, long-podded *Lunaria*. 3. The leucocium-leaved, long-podded *Lunaria*. 4. The small-podded, leucocium-leaved *Lunaria*; and, 5. The *Lunaria*, with the wreathen pod.

D R A B A.

THE pod is of an oval, oblong figure; the valves are equal to the dissepimentum: there is no style.

Draba caulibus nudis, foliis incis.
The naked-stalked, cut-leaved *Draba*.

The root is oblong, slender, fibrated, and white: the leaves are small, of an oblong figure, jagged at the edges, and of a dusky green colour: the stalks are round, naked, and four inches high: the flowers stand in a kind of short spikes, at the tops, and are small and white.

It is a native of France. C. Bauhine calls it, *Barba pastoris minor loculo oblongo, foliis laciniatis*.

The other species are, 1. The long-leaved, hairy *Draba*. 2. The smooth, shorter-leaved *Draba*.

V E L L A.

THE pod has a dissepimentum of twice the bigness of the valves, and of an oval figure. This character alone sufficiently distinguishes it, without a farther description.

There is but one species of this genus. C. Bauhine calls it, *Nasturtium sylvestre cruce affine*.

Class the Fifteenth.

Division the Second.

TETRADYNAMIA SILIQUOSA.

Plants which have four efficacious stamina in the flower, and long pods.

B U N I A S.

THE pod is of a square figure, and the angles are unequal and acuminate. This genus comprehends the *Erinago* of Tournefort and others.

Bunias foliis antrosum sinuatis.
The *Bunias*, with leaves sinuated forwards.

The root is oblong, white, and fibrated; the stalks are round, smooth, often reddish, and two feet high: the leaves are narrow, sinuated, and hairy; there are very few of them on the stalks: the flowers are moderately large and yellow: the pods are short, and terminate in a sharp point.

It is a native of France. Tournefort calls it, *Erucago segetum*; C. Bauhine, *Erucica siliqua quadrangula echinata*.

The other species are, 1. The tall, oriental, dandelion-leaved *Bunias*. 2. The small-leaved *Bunias*.

C H E I R A N T H U S.

THE germen in the flower has, on each side, a little denticulate protuberance: the leaves of the calyx are two, and are gibbous at the base: the seeds are plane. This genus comprehends the *Leucocium* of Tournefort and others.

Cheiranthus foliis lanceolatis obtusis incanis, filiquis truncatis.

The obtuse, lanceolated-leaved Cheiranthus, with truncated pods.

Stock Gil-
ly-flower.

The root is oblong, white, tortuous, and fibrated: the plant rises to two or three feet high: the stalk is round, thick, hoary, and ramose: the leaves are three inches long, an inch and a half broad, obtusely pointed, and white: the flowers stand in spikes, at the tops of the stalk, and are also white: the pods are long.

It is a native of the sea-coasts of Arabia, but is introduced into our gardens almost every-where, and has suffered strange variations by culture. C. Bauhine calls it, *Leucolum incanum majus*. The varieties of our purple and white double and single Stock-gilly-flowers are all from this single species; tho' authors have described them as distinct ones.

The other species really distinct are, 1. The narrower green-leaved, white-flowered Cheiranthus. 2. The small-flowered, white, perennial Cheiranthus. 3. The hesperis-leaved Cheiranthus. 4. The cruce-leaved Cheiranthus. 5. The sinuated-leaved, sea Cheiranthus. 6. The white, long-leaved, sea Cheiranthus. 7. The common, yellow Cheiranthus, or Wall-flower. 8. The larger-flowered, tuberculous, yellow Cheiranthus. 9. The large-flowered, serrated-leaved Cheiranthus. 10. The narrow-leaved, pale yellow-flowered, Alpine Cheiranthus.

H E S P E R I S.

THE petals of the corolla are bent obliquely: the pod is slender; the base of the stigma is bifurcated, and it's apex connivent.

Hesperis caule simplicifolia, foliis ovato-lanceolatis denticulatis.
The simple-stalked Hesperis, with ovato-lanceolate, denticulated leaves.

Dames
Violet.

The root is oblong, white, woody, and fibrated: the stalks are hairy, robust, and three feet high: the leaves are of a dusky green colour, hairy, serrated, and pointed at the ends, two inches long, and three quarters of an inch broad: the flowers stand at the tops of the branches; they are moderately large, and of a beautiful purple colour, sometimes very pale, sometimes quite white.

It is a native of Italy. Dodonæus calls it, *Viola matronalis*; C. Bauhine, *Hesperis hortensis*.

The other species are, 1. The pale, scented, narrower-leaved Hesperis. 2. The common, scentless, field Hesperis. 3. The Hesperis, with articulated pods. 4. The common, roundish-leaved Hesperis, or Alliaria. 5. The very narrow, podded Hesperis. 6. The square, podded, leucolum-leaved Hesperis. 7. The corniculate Hesperis, with a dusky flower. 8. The thick-leaved, procumbent, sea Hesperis. 9. The hairy, blue Hesperis. 10. The dentated-leaved, large-flowered Hesperis. 11. The lacinated-leaved Hesperis, with lunated pods. 12. The shrubby Hesperis. 13. The coronopus-leaved Hesperis. 14. The great, blue, African, coronopus-leaved Hesperis.

R A P H A N U S.

THE pod is rounded, torose, and, as it were, articulated: there are four melliferous glands in the corolla; two of them between the shorter stamina and the pistil, and two between the longer stamina and the calyx.

This genus comprehends the *Raphanus*, *Raphanistrum*, and *Cakile* of authors.

Raphanus

Raphanus filiquis torosis angustioribus glabris. Jointed-podded
The Raphanus, with knotty, smooth, slender pods. Charlock.

The root is oblong and white: the plant rises to two feet high: the stalk is round, robust, and ramose: the leaves are three inches long, and two broad, of a figure approaching to oval, dentated at the edges, and of a deep green colour: the flowers are large and yellow; the pods two inches long, slender, and jointed, as it were.

It is frequent in our corn-fields. C. Bauhine calls it, *Rapistrum luteum filiqua articulata*.

The other species are, 1. The white-flowered, field Raphanus. 2. The striated-podded, field Raphanus. 3. The rocket-leaved, white-flowered, field Raphanus. 4. The great-podded, white-flowered Raphanus. 5. The common, garden Radish. 6. The black-rooted Radish.

DENTARIA.

THE pod bursts open with elasticity and violence, and the valves turn back: the stigma is emarginated.

Dentaria foliis septenis angustioribus. Toothwort.
The seven-leaved Dentaria.

The root is oblique, ramose, and composed of a kind of squamose tuberousness: the leaves are placed on long pedicles, and each is composed of seven oblong, narrow, dentated pinnae, three in pairs, and an odd one at the end: the stalk is tender, and ten inches high: the flowers are large, and of a beautiful pale red, or white, colour; they stand on the tops of the stalks, in a kind of spikes.

It is found in some of our woods. C. Bauhine calls it, *Dentaria heptaphyllon*.

The other species are, 1. The nine-leaved Dentaria. 2. The five-leaved Dentaria. 3. The narrower-leaved Dentaria. 4. The rough-leaved Dentaria. The number of leaves on a pedicle is not absolutely determinate in any of the same species, the same plant shewing variations in this respect; but the general number may always be seen. These plants frequently produce a kind of bulbs in the axæ of their leaves, as some of the lilies, the bistort, &c. do, which will produce new plants.

CARDAMINE.

THE pod bursts open with violence and elasticity, and the valves turn backward: the stigma is entire, not emarginated.

Cardamine foliis pinnatis, foliolis subrotundis integris. Ladies
The pinnated-leaved Cardamine, with the pinnales roundish and entire. Smock.

The root is composed of a cluster of white fibres: the plant rises to a foot high: the stalk is round, green, and robust; the leaves are long, and composed of several pairs of pinnae; the radical ones have the pinnae round; those on the stalk longer and narrower: the flowers are large, beautiful, and white; they stand in clusters, on the tops of the stalks.

It is common in our meadows. C. Bauhine calls it, *Cardamine vulgaris*.

The other species are, 1. The smaller-flowered Cardamine. 2. The very small-flowered Cardamine. 3. The fumitory-leaved Cardamine. 4. The little, hairy, small-flowered Cardamine. 5. The tall and somewhat larger-flowered Cardamine. 6. The little, rocket-leaved Cardamine. 7. The mountain, asarum-leaved Cardamine. 8. The purple-flowered, hairy, celandine-leaved Cardamine. 9. The trifoliate, Alpine Cardamine. 10. The larger, African, trifoliate Cardamine. Most of these have been called by authors *Nasturtia aquatica*.

BRASSICA.

THE calyx is erect and connivent: the seeds are globose: there is a melliferous gland between the shorter stamina and the pistil, and another between the longer stamina and the calyx.

This genus comprehends the Brassica and Rapa of Tournefort, and the Eruca of others.

Brassica foliis lyratis, caule hirsuto, siliquis glabris. **White**
The lyrate-leaved, hairy-stalked Brassica, with smooth pods. **Rocket.**

The root is oblong, white, and fibrated: the stalks are hairy, robust, and two feet high: the leaves are oblong and sinuated, smooth, of a dusky green colour, and obtusely pointed at the ends: the flowers stand in a kind of spikes, on the tops of the stalks; they are moderately large and white, with a tinge of bluish, or of yellowish, and have often striae of a deep bluish-black, in great numbers.

It is a native of Africa, but is common in our gardens. C. Bauhine calls it, *Eruca hortenensis latifolia*. It has always been distinguished from the Brassica, indeed, by authors, but not by nature.

The other species are, 1. The rough-podded Eruca, with yellow flowers. 2. The undivided-leaved Eruca. 3. The narrower-leaved Eruca. 4. The shorter-leaved Eruca.

Of those called Brassicae by authors we have, 1. The common Cabbage, or Brassica, whose root rises into a kind of stalk in the upper part: there are several varieties of this, owing to culture, and other accidents, which have the honour to be raised to species by authors, as the common white Cabbage, the red Cabbage, the curled Cabbage, the fringed Cabbage, the lacinated, red Cabbage, the Cauliflower, the turnep Cabbage, the smallage-leaved Cabbage. 2. The wild Brassica. 3. The tall, ramose, arborescent Brassica. 4. The perfoliate Brassica, with white flowers. 5. The Alpine, perennial Brassica.

Of those called Rapae we have, 1. The common Rapa, or Turnep. 2. The long-rooted, narrow-leaved Rapa, or *Napus sativa*.

SINAPIS.

THE calyx is patent: the ungues of the corolla are erect, and there is a gland, situate between the two shorter stamina and the pistil, and another between the longer stamina and the calyx.

Sinapis siliquis hispida, rostro obliquo longissimo. **White**
The Sinapis, with rough pods, with a very long, oblique beak. **Mustard.**

The root is oblong, white, and fibrated: the plant rises to two feet high: the stalks are round, robust, and ramose: the leaves are large, oblong, of a dusky green colour, deeply sinuated, and hairy, and very rough to the touch: the flowers are moderately large, and yellow; the seeds are whitish.

It is cultivated in gardens. C. Bauhine calls it, *Sinapi apii folio*; Dodonæus, *Sinapi sativum alterum*.

The other species are, 1. The common Mustard plant. 2. The early, black-seeded Sinapis. 3. The early Sinapis, with undivided leaves. 4. The cruce-leaved Sinapis. 5. The lobated-leaved Sinapis. 6. The nasturtium-leaved Sinapis. 7. The great, broad, lettuce-leaved Sinapis. 8. The narrower, lettuce-leaved Sinapis.

ARABIS.

THERE are four nectariferous glands, each of them affixed, in the manner of a reflex scale, to the inner part of the base of the calyx.

Arabis foliis amplexicaulis, siliquis decurvis, planis, linearibus.
The Arabis, with leaves surrounding the stalk, and with plane, linear,
crooked pods.

The root is white and oblong; the radical leaves are three inches long, half an inch broad, variously sinuated about the edges, and of a bluish-green: the stalk is round, slender, two feet high, and ramose; the leaves are oblong, and surround the stalks at their base: the flowers are numerous, and of a very pale yellow.

It is a native of Germany and Hungary. Tournefort calls it, *Leucoium hesperidis folio*.

The other species are, 1. The Russian, broad-leaved Arabis, with pendulous pods.
 2. The narrow, rough-leaved Arabis.

ERYSIMUM.

THE pod is columnar, and exactly square. This genus comprehends several of the *Turritis*'s and *Hesperis*'s of authors.

Erysimum siliquis cauli appressis.

The Erysimum, with pods close to the stalk.

**Hedge
Mustard.**

The root is oblong, white, hard, and tortuous; the leaves are three inches long, an inch broad, deeply sinuated, and of a dusky greyish-green: the stalks are robust, rigid, round, and two feet high; the flowers are small and yellow; the pods stand half-way down the stalks, in form of a thin spike; they are short, and are applied close to the stalk.

It is common by way-sides. C. Bauhine calls it, *Erysimum vulgare*.

The other species are, 1. The smooth, broad-leaved *Erysimum*. 2. The short-podded, hoary-leaved *Erysimum*. 3. The *Erysimum*, called *Alliaria*. 4. The square-podded *Hesperis* of authors. 5. The smooth, rocket-leaved *Erysimum*. 6. The *Erysimum*, called *Leucoium*-leaved *Turritis*.

TURRITIS.

THE pod is extremely long, and of an angular figure: the calyx and corolla are erect.

Turritis foliis omnibus dentatis hispida, caulinis amplexicaulis.

The Turritis, with all the leaves dentated and rough, those on the stalk surrounding it.

The root is white, oblong, and slender; the radical leaves are oblong, narrow, sinuated, and hairy: the stalk is slender, but robust, round, and a foot high: the leaves surround it at their bases; they are rough, oblong, narrow, and dentated: the flowers are small and white; the pods very long.

It is common in dry places. C. Bauhine calls it, *Turritis minor*.

The other species are, 1. The simple-stalked, lanceolated-leaved *Turritis*, or common Tower-mustard. 2. The succory-leaved and perfoliate *Turritis*. 3. The ramose *Turritis*. 4. The divided-leaved, larger-flowered *Turritis*.

SISYMBRIUM.

THE pod is incurvated; the calyx is patent; and the corolla is also patent.

Sisymbrium

Sisymbrium foliis pinnatis, foliolis subcordatis.

The pinnated-leaved Sisymbrium, with subcordated pinnules.

**Water
Cress.**

The root is fibrous; the stalk is slender and procumbent: the leaves are three inches long, composed of three or four pairs of short and broad pinnæ, with an odd one at the end: the flowers are small and white.

It is common about ditch-sides. C. Bauhine calls it, *Nasturtium aquaticum vulgare*.

The other species are, 1. The radish-leaved, short-podded *Sisymbrium*: 2. The *Sisymbrium*, with the lower leaves capillaceous, the rest pinnatifid. 3. The little-flowered *Sisymbrium*, with serrated pinnule. 4. The wormwood-leaved *Sisymbrium*. 5. The *Sisymbrium*, called by authors five-leaved, yellow Rocket. 6. The lesser-flowered Rocket of authors. 7. The great, yellow-flowered, rough-stalked Rocket of authors. 8. The rough-podded *Sisymbrium*. 9. The *Sisymbrium*, called cut-leaved, water Radish.

C R A M B E.

THE four long stamina are bifurcated at their tops: the antheræ are only on one of the points. This genus comprehends the *Crambe* and the *Rapistrum* of Tournefort.

Crambe foliis cauleque scabris.

The Crambe, with the leaves and stalk both rough.

**Round-leaved
Charlock.**

The root is oblong, thick, and white; the leaves are six inches long, rounded at the extremity, and sinuated about the edges: the stalk is round, robust, and firm; it rises to five feet high; the flowers are very numerous, large, and white: the pod contains but one seed.

It is a native of Spain. Morison calls it, *Rapistrum maximum rotundifolium monospermon*.

The other species are, 1. The auriculated, acute-leaved *Crambe*. 2. The longer-leaved *Crambe*. 3. The sea cabbage, or cabbage-leaved *Crambe*. 4. The rocket-leaved, cuspidated, podded *Crambe*. 5. The narrower-leaved, sea *Crambe*.

I S A T I S.

THE pod is of a lanceolated figure, and contains only one cell, in which is a single seed: the valves forming the pod are two, and are navicular in shape.

Isatis foliis latioribus glaucis.

The broad, glaucous-leaved Isatis.

Woad.

The root is oblong and very thick; the plant rises to three feet high: the stalk is round, rigid, thick, and branched: the leaves are broad, oblong, and very numerous, on the stalk the flowers are very numerous, small, and yellow.

It is cultivated in our fields for the use of dyers. C. Bauhine calls it, *Isatis fistula five latifolia*.

The other species are, 1. The narrow-leaved, or wild *Isatis*. 2. The dwarf, Portugal, narrow-leaved *Isatis*.

C L E O M E.

THERE are three nectariferous glands in the flower, one at every sinus of the cup, the lowest only excepted: all the petals are ascendent.

This genus comprehends the *Sinapistrum* of Tournefort and Rivinus.

Cleome pentaphyllea floribus gynandris.
The five-leaved Cleome, with gynandrous flowers.

**Cinquefoil, Ba-
 stard Mustard.**

The root is oblong and white; the stalk is round, smooth, and two feet, or more, in height: the leaves stand on long pedicles, five on each; they are oblong, narrow, and pointed at the ends; those toward the upper parts of the stalk are often only three on each pedicle: the flowers are moderately large and white; they stand in clusters at the tops of the branches: the pods are an inch long.

It is a native of Africa, and the East and West Indies. C. Bauhine calls it, *Quinquifolium lupini folio*.

The other species are, 1. The trifoliate Cleome, with crooked pods. 2. The narrower-leaved, reddish-flowered, cinquefoil Cleome. 3. The shrubby, trifoliate Cleome; and 4. The trifoliate, Portugal Cleome, with corniculated pods.

Class the Sixteenth.

MONADELPHIA.

Plants which have uniform stamina growing together at their base.

IN this, as in the two former classes, it will be most convenient to give the general classifical character here, and to refer to it from every genus, only mentioning, as generical characters, the essential and distinctive ones.

Classifical characters of the Monadelphis.

The calyx is a perianthium, it is never wanting; it is permanent, and in many genera double.

The corolla consists of five petals, vertically cordated, and one of their sides always embraces that of the next petal, the contrary way to the sun's motion.

The stamina are filaments cohering at the base, and distinct at their tops: if numerous, the exterior ones are the shorter.

The receptacle of the fructifications is prominent in the center of the corolla: the germina are erect, and rotato-articulately surround the top of the receptacle: the styles all cohere together at the bottom and form one body with the receptacle; in their upper part they are distinct, and are as numerous as the germina, forming so many filaments; the stigmata are patent and slender.

The pericarpium is a capsule, divided into as many cells as there were pistils; these are of various figures in the different genera: the seeds are kidney-shaped.

Of the Monadelphis, some have five stamina, others ten, others a great number, according to this obvious distinction; they are to be arranged into three orders.

Class the Sixteenth. Order the First.

MONADELPHIA PENTANDRIA.

Plants, with the stamina, five in number, and cohering together, at their base, into one body.

WALTHERIA.

THE style is single; the capsule is formed of two valves, and contains a single cell, with one seed. It approaches to the althæa in appearance, but the characters sufficiently distinguish it.

HERMANNIA.

THE style is single; the capsule contains five cells: the petals are semitubular at the base.

Hermannia

Hermannia foliis lanceolatis obtusis serratis.

The *Hermannia*, with lanceolated, obtuse, serrated leaves.

African Marsh
Mallows.

The root is long, thick, white, and fibrated; the plant grows up to the form of a little shrub; the stalks are brown; the leaves large, obtusely pointed, oblong, of a pale greyish-green, and serrated at the edges: the flowers are small, yellow, and pendulous.

It is a native of the Cape of Good Hope. Tournefort calls it, *Hermannia frutescens folio oblongo serrato*.

M E L O C H I A.

THE styles are five in number, and the capsule contains five cells.

Melochia floribus umbellatis, capsulis pyramidalis pentagonis.

The *Melochia*, with umbellated flowers, and pyramidal, pentagonal capsules.

The root is very thick, oblong, and white; the plant rises to six feet high; the stalk is round, green, and not very thick; the leaves are of an oval figure, lanceolated and serrated, and stand on pedicles: the flowers stand four or five together, in a kind of umbel, on pedicles arising opposite to the leaves; they are large and red.

It is a native of the Brasilia, but is preserved in our gardens.

Class the Sixteenth. Order the Second.

M O N A D E L P H I A D E C A N D R I A.

Plants with stamina ten in number, and cohering together at their base.

H U G O N I A.

THE styles are three in number; the fruit is a berry containing only one seed. Of this genus there is but one known species.

H U G O N I A.

The *Hugonia* is a shrub of eight or ten feet in height; the root is brachiated, and its bark yellowish: the bark of the branches is greyish, and they are armed with robust thorns: the leaves are obversely oval, two inches long, and even at the edges: the flowers are yellow, moderately large, and stand three or four together at the tops of the branches.

It is a native of the East Indies. Van Rheede calls it, *Modera Canni*.

C A N N A R U S.

THE style is single; the stigma is simple; the capsule is formed of two valves; but it contains only one cell, and in that but one seed.

These characters sufficiently distinguish the *Cannarus*, without any farther description.

G E R A N I U M.

THE style is simple, but it has five stigmata: the capsule is of the form of a bird's beak. It contains five cells, and in each of them a single seed.

1. *Geranium pedunculis simplicibus unifloris.**The Geranium, with simple, single-flowered pedicles.***Bloody
Crane's-bill.**

The root is oblong and slender; the plant grows to five or six inches high; the stalks are slender, weak-jointed, and often, in part, procumbent: the leaves are an inch in diameter, roundish in their circumference, but deeply divided into a multitude of narrow, oblong segments: the flowers are very large, and of a blood-red.

It is a native of England, but is not common. C. Bauhine calls it, *Geranium sanguineum maximo flore*.

2. *Geranium calycibus monophyllis foliis cordato-orbiculatis, incis, zona notatis.**The Geranium, with one-leaved cups, and with cordato-orbiculated, edged leaves.*

This species grows to a kind of shrubby form; the stem is thick, brown, and woody: the plant five feet high: the leaves are two inches and a half in diameter, roundish, cordated at the base, hairy, soft to the touch, of a pale green, surrounded with a zone or rim of reddish, of white, or of a dark colour at their edges, and sinuated: the flowers are large, and of a beautiful red; they stand in a kind of umbels, on long pedicles.

It is a native of Africa. Commelin calls it, *Geranium Africanum arborefcens alchemilla foliis, floribus rubris*.

The other species of this genus are very numerous; they are, 1. The batrachoide, or aconite-leaved Geranium. 2. The small-flowered, aconite-leaved Geranium. 3. The great, broad, aconite-leaved Geranium. 4. The little, purple-flowered, aconite-leaved Geranium. 5. The variegated-flowered Geranium. 6. The black-flowered Geranium. 7. The grumous-rooted Geranium. 8. The great, tuberous Geranium. 9. The silvery, Alpine Geranium. 10. The grey-leaved, thick-rooted Geranium. 11. The shining, round-leaved Geranium. 12. The shining, divided-leaved Geranium. 13. The mallow-leaved Geranium, or dove's foot. 14. The small-flowered, dove's foot Geranium. 15. The divided-leaved, dove's foot Geranium. 16. The great, divided-leaved, dove's foot Geranium. 17. The divided-leaved, dove's foot Geranium, with long pedicles. 18. The marshmallow-leaved Geranium. 19. The thick, rugose-leaved Geranium. 20. The little, betony-leaved Geranium. 21. The herb Robert, or divided-leaved Geranium. 22. The tall, hemlock-leaved Geranium. 23. The hemlock-leaved musk Geranium. 24. The scentless, hemlock-leaved Geranium. 25. The chrysanthemum-leaved Geranium. 26. The Cretic Geranium, with long beaks. 27. The botrys-leaved Geranium. 28. The woolly, thin-leaved Geranium. 29. The chamedrys-leaved Geranium. 30. The thick-rooted, stinking Geranium. 31. The fine-leaved Geranium.

These are the European Gerania: the African shrubby ones wear quite a different face; they are, 1. The mallow-leaved, sweet Geranium. 2. The marshmallow-leaved Geranium. 3. The mallow-leaved, soft, hairy, scentless Geranium. 4. The deeply, sinuated, mallow-leaved Geranium. 5. The alchemilla-leaved, hoary Geranium. 6. The betony-leaved Geranium. 7. The larger-leaved, hairy Geranium. 8. The smooth, large-leaved Geranium.

The African Gerania, with dissected leaves, make another series yet quite different from the former. Of these are, 1. The columbine-leaved, tuberous, and knotty Geranium. 2. The smaller, columbine-leaved, red Geranium. 3. The anemone-leaved Geranium. 4. The narrower, anemone-leaved Geranium. 5. The little red flowered, gooseberry-leaved Geranium. 6. The coriander-leaved Geranium. 7. The larger-flowered, coriander-leaved Geranium. 8. The night-scented, or dusky Geranium. 9. The myrrhis-leaved, African Geranium. 10. The narrower, myrrhis-leaved, African Geranium. 11. The fine, divided-leaved, African Geranium.

Class

Class the Sixteenth. Order the Third.

MONADELPHIA POLYANDRIA.

Plants with very numerous stamina connected into one body at the base.

PENTAPETES.

THE calyx is simple: the stamina are twenty in number; five of them are very long and sterile: the cups all contain five cells, and in each a number of membranaceous seeds.

These characters sufficiently distinguish the Pentapetes, without any farther description.

STEWARTIA.

THE calyx is simple; the style is single, and its stigma is quinquefid: the fruit is a dry apple, consisting of five lobes, and having in each a single seed.

The characters sufficiently distinguish this also, without a farther description.

SIDA.

THE calyx is simple, angulated, and plicated: the style is divided into several parts: the capsules are numerous.

This genus comprehends the Malvinda and Abutilon of authors.

Sida foliis subrotundo-cordatis acuminatis.
The roundish, cordated-leaved Sida.

Yellow
Ballon.

The root is small, white, oblong, and fibrated; the stalks are round, thick, robust, and covered with a thick, woolly down, feeling unctuous and fatty: the leaves are large, roundish but pointed, and hoary, very soft and whitish; the flowers are moderately large, and of a beautiful yellow.

It is a native of Ceylon, and also of North America. C. Bauhine calls it, *Althæa Theophrasti flore luteo*; others, *Abutilon*.

The other species of Sida are, 1. The maple-leaved, white Sida. 2. The hastated-leaved Sida. 3. The carpinus-leaved, shrubby Sida. 4. The yellow, small-flowered, carpinus-leaved Sida. 5. The stellated, alder-leaved Sida. 6. The vine-leaved Sida. 7. The rough-stalked Sida. 8. The hoary-podded Sida. 9. The prickly-fruited, shrubby Sida. 10. The pyramidal-spiked Sida.

NAPÆA.

THE calyx is simple, and of an urceolated figure; the style is divided into several parts: the fruit is composed of five capsules. The characters sufficiently distinguish the Napæa from all the other plants of this class, without a farther description.

LAVATERA.

THE calyx is double; the exterior one is divided into three segments; the fruit is composed of numerous capsules.

Lavatera foliis glabris, caule scabro, fructibus orbiculo testis.
The smooth-leaved, rough-stalked Lavatera, with fruits covered with an orbiculum.

The root is white and long; the stalks are hardly erect, ramose, rough, and thick: the lower leaves are roundish and cordated; the upper ones somewhat hastated or angulated;

gulated; all of them are crenated at the edges: the flowers are very large, and of a fine blood red at the unguet, and of a paler red elsewhere.

It is a native of Syria. C. Bauhine calls it, *Malva trimestris flore cum unguibus purpureis*.

The other species are, 1. The tree Mallow. 2. The tree Marshmallow, with acute leaves, and small flowers. 3. The small-flowered, umbellated, Cretic Mallow. 4. The large-leaved Lavatera.

MALVA.

THE calyx is double; the exterior one is composed of three leaves: the capsules are numerous, and each contains a single seed.

This genus contains the Malva of authors in general, and the Abutilon of Dillenius.

Malva foliis rotundo-angulatis.

The roundish, but angulated-leaved, mallow.

**Ivy-leaved
Mallow.**

The root is oblong and white; the stalk is round, smooth, firm, and grows to five feet high: the leaves are smooth, large, and somewhat resemble the larger and less angulated leaves of ivy: the flowers are very numerous, large, and of a beautiful red.

It is a native of Italy. C. Bauhine calls it, *Malva hederaceo folio*.

The other species are, 1. The common, field Mallow. 2. The erect Mallow, with small, white flowers. 3. The common, procumbent, white-flowered Mallow. 4. The curled-leaved Mallow, with clustered flowers. 5. The creeping, alcea-leaved Mallow, with deep purple flowers. 6. The red-flowered, African, shrubby Mallow. 7. The tricuspidated-fruited, oriental Mallow. 8. The common, vervain Mallow, or Alcea. 9. The hairy-fruited, vervain mallow. 10. The five-leaved, or hemp-leaved Mallow. 11. The hairy, broad-leaved Mallow. 12. The geranium-leaved, sea Mallow. 13. The smooth, great-flowered Mallow. 14. The clim-leaved Mallow. 15. The roundish-leaved, oriental Mallow. 16. The ground-ivy-leaved Mallow.

GOSSYPIMUM.

THE calyx is double; the exterior one is composed of three leaves: the capsule contains four cells: the seeds are surrounded with a fine downy matter.

This genus comprehends the Xylon of Tournefort.

Gossypium foliis quinquelobis.

The Gossypium, with quinquelobate leaves.

**The Cotton
Plant.**

The root is long and fibrated; the stalk is hard, woody, and ten feet high: the leaves are large, and are divided more or less deeply into five portions or segments; they are hairy, and stand on long pedicles: the flowers are large, and of a pale yellow, edged with purple.

It is a native of Greece. C. Bauhine calls it, *Gossypium frutescens semine albo*.

The other species are, 1. The trilobate-leaved Gossypium. 2. The smooth, tree Gossypium. 3. The prickly, tree Gossypium. 4. The yellow-flowered, tree Gossypium. 5. The green-seeded, tree Gossypium. 6. The long-fruited, tree Gossypium.

MALOPE.

THE calyx is double; the exterior one is formed of three leaves: the fruit is composed of a number of conglomerated capsules, each containing a single seed.

This genus comprehends the Malacoides of Tournefort.

Malope

*Malope foliis ovatis crenatis glabris.**The smooth, oval, crenated-leaved Malope.***Betony-leaved
Mallow.**

The root is oblong, white, and divaricated; the stalks are numerous, procumbent, or oblique, and about six inches long: the leaves are few, they stand on long pedicels, and are oblong, of a pale green, and like the leaves of betony in figure, but smaller: the flowers stand on moderately long pedicles, arising from the axæ of the leaves; they are like those of the common mallow, and of a pale red.

It is a native of Tuscany; Morison calls it, *Malva betonica folio*; Tournefort, *Malacoides betonica folio*.

The other species are, 1. The small, blue-flowered, angulated-leaved Malope.
2. The larger-flowered Malope.

U R E N A.

THE calyx is double: the exterior one is divided into five segments; the capsule contains five cells, each holding a single seed, and is echinated on the surface.

*Urena foliis angulatis.**The angulated-leaved Urena.*

The root is brachiated and fibrated; the shrub is robust and ramose; the bark brown; the woody part whitish, and moderately firm: the leaves are large, and deeply sinuated; the flowers are moderately large and beautiful.

It is a native of China. Breynius calls it, *Trifolium affinis Indiæ orientalis xanthii facie*.

A L C E A.

THE calyx is double: the exterior one is divided into six segments; the fruit is composed of numerous capsules, each containing a single seed.

*Alcea foliis sinuato-angulosis.**The sinuated and angulated-leaved Alcea.***The Holly-hock,
or Holly-oak.**

The root is long, thick, and white; the stalk is round, hairy, robust, and grows to six, eight, or more, feet in height: the leaves stand singly on long pedicles; they are large, hairy, roundish, and angulated: the flowers are very large and numerous; they stand on short pedicles, and are naturally of a pale red colour.

It is a native of the East. C. Bauhine calls it, *Malva rosea folio subrotundo*.

Culture produces almost infinite varieties of it, such as double-flowered, single-flowered, deep red, pale red, white, &c. Holly-hocks. Tournefort, and too many others, have given these as so many species, but they are truly all but varieties of this.

The other really distinct species of Alcea are, 1. The fig-leaved, or palmato-digitated-leaved Alcea. 2. The smoother and smaller-leaved Alcea. 3. The deeply, sinuated-leaved Alcea. The plants, called by the generality of authors Alceæ, are properly Malvæ or Mallows.

A L T H Œ A.

THE calyx is double: the exterior one is divided into nine segments: the capsules are numerous, and each contains a single seed.

*Althæa foliis simplicibus tomentosis.**The simple and downy-leaved Althæa.***Common
Marsh-mallow.**

The root is long, thick, and white; the stalk is round, robust, and four feet high: the leaves are large, broad, dentated at the edges, and downy; of a whitish colour, and soft, like velvet, to the touch; the flowers are large and white.

It is common on our sea-coasts, and on the banks of rivers, toward their openings into the sea. A decoction of the root is an excellent diuretic and emollient.

The other species are, 1. The hemp-leaved *Althæa*, commonly called hemp-leaved *Alcea*. 2. The deeply sinuated, leaved *Althæa*. 3. The large-flowered, trifid, hairy-leaved *Althæa*, the *Alcea hirsuta* of *Bauhine*.

HIBISCUS.

THE calyx is double: the exterior one is composed of a great number of leaves, the capsule contains five cells, and in each of them several seeds.

This genus comprehends the *Hibiscus* and *Triocum* of *Linnaeus's Genera Plantarum*, the *Malvaviscus* of *Dillenius*, the *Ketmia* of *Tournefort*, and the *Bammia* of *Ruppus*.

1. *Hibiscus foliis cordato-quinquangularibus obsolete serratis.* The Chinese. The *Hibiscus*, with cordato-quinquangular, serrated leaves. *nese Rose.*

The root is very large and divaricated; the plant grows to the stature of a small tree: the stem is woody; the leaves are divided somewhat like those of the vine, cordated at the base, and serrated; they stand on long reddish pedicles, and are of a pale green on the upper surface, and hoary below: the flowers are of the size of a large rose, and of a beautiful red colour.

It is a native of China. *Morison* calls it, *Althæa arborea rosa Chinenfis*; *Ferrari*, *Rosa Sinenfis*.

2. *Hibiscus foliis cordato-peltatis septemangularibus serratis bifidis.* *Abelmosch.*
The *Hibiscus*, with rough, serrated, cordato-peltated, and septangular leaves.

The root is long and white; the stalk is robust, hairy, and green; the leaves are rough to the touch, serrated, and deeply angulated: the flowers are not very large; they are yellow, and of a perfumed scent: the seed is much sweeter.

It is a native of Egypt, the East Indies, and America. *C. Bauhine* calls it, *Alcea Ægyptiaca villosa*. The seeds of it were once kept in our shops as a provocative and cordial, but they are now out of use.

3. *Hibiscus foliis tripartitis incis, calycibus inflatis.* *Bladder*
The tripartite-leaved *Hibiscus*, with inflated cups. *Alcea.*

The root is oblong and white; the stalks are numerous, round, and weak; the leaves are smooth, and deeply divided into segments, which are serrated on their edges: the flowers are large and yellow, with a black bottom: the fruit is composed in an inflated, open cup.

It is a native of Italy. *C. Bauhine* calls it, *Alcea vesicaria*; *Linnaeus*, *Triocum*.

4. *Hibiscus foliis ovatis acuminatis serratis, caule simplicissimo.* *elm-leaved*
The oval, acuminate, serrated-leaved, simple-stalked *Ketmia.*
Hibiscus.

The root is very long, tough, and white; the stalk is erect, simple, round, hollow, and of a pale green; the leaves are somewhat like those of the mulberry-tree, of a bright green on the upper side, and whitish and hoary underneath: the flowers are very large, and of a pale red, and stand at the tops of the stalks.

It is a native of Africa and America. *Tournefort* calls it, *Ketmia populi folio*.

The other species of *Hibiscus* are, 1. The common, smooth-leaved *Ketmia* of authors. 2. The smooth-leaved, yellow *Ketmia*. 3. The poplar-leaved *Ketmia*. 4. The lime-leaved *Ketmia*. 5. The hemp-leaved *Ketmia*. 6. The rough-stalked *Ketmia*. 7. The hatted-leaved *Ketmia*. 8. The vine-leaved *Ketmia*. 9. The fig-leaved *Hibiscus*.

Hibiscus: 10. The great, white-flowered, prickly Hibiscus. 11. The cordated-leaved Hibiscus.

CAMELLIA.

THE calyx is imbricated, and composed of several leaves, the interior of which are the larger.

It is an oriental, described by Kœmpfer, in his Japan, p. 850. The characters sufficiently distinguish it, without a farther description.

Class the Seventeenth.

DIADELPHIA.

Plants which have their antheræ placed on two separate stands.

This Class comprehends the Papilionaceæ of Tournefort, the Leguminosæ of Ray.

The classical characters are these:

THE calyx is a perianthium, formed of a single leaf, decaying very soon, and of a campanulated figure: it's base is gibbous, and is affixed to the pedicle by it's under surface; above, it is obtuse, and contains a honey-juice: the rim is divided into five parts, acute, erect, oblique, and unequal: the lower segment, which has no fellow, is longer than the others; the upper pairs are short and ramose: the base, which is always wet with a honey-dew, contains the receptacle. The corolla is papilionaceous, or of the figure of a butterfly, and is unequal in it's parts: the several petals, which are four in number, are distinguished each by it's peculiar name. The vexillum is a petal, which covers the others; it is large, incumbent, and of a plano-horizontal figure; it's unguis is inserted into the upper edge of the receptacle; when out of the cup, it approaches to a roundish figure; it is nearly entire, and has a line elevated above the rest of the surface, running all along it, and most visible near it's apex, giving an appearance of this petal's being compressed downwards; the part of this petal that comes nearest the base approaches to a semicylindric figure, and, in some degree, embraces the petals that are under it; the disk of this petal is depressed on each side, but the two sides, near their edges, turn upwards; where the half of the tube terminates at the explication of half of the limb, there are, behind, two hollow impressions, prominent below; these compass the alæ, which are subulated under them. The alæ are a pair of petals, one placed at each side of the corolla; they are placed under the vexillum; the margin is incumbent, and the sides perpendicular; they are of a roundish, oblong figure, broadest externally, and have their upper edge nearly strait, their lower swelling into a kind of roundness; the base of each is bifid: the lower portion of this bifurcation is extended into an unguis, which is inserted into the side of the receptacle, and is of about the length of the cup: the upper portion is shorter, and is bent. The carina is the lowest petal, it is often divided into two portions; it is situated between the alæ, under the vexillum; it is of the shape of a boat, hollowed, and it's sides compressed: it's base is mutilated, and it's lower part is extended into an unguis, of the length of the cup, and inserted into the receptacle; it's lateral and upper segments are shorter, and are implicated with the like parts of the alæ: the sides of the carina, in figure, much resemble the alæ, and their situation is also like, except that it is lower, and more inward. The linea carinalis, or line of the carina, is continued nearly strait to about the middle of the petal, and, from this part to it's extremity, it rises into a segment of a circle: the linea marginalis is continued strait to the very extremity, where it terminates, after joining obtusely with the carinal line. The stamina, called diadelphous, are two filaments, unlike to one another; the one of them is situated below, and involves the pistil; the other is situated above, and lies upon the pistil. The lower filament surrounds the germen; it's lowest half is membranaceous, cylindric, and opens longitudinally upwards; from hence it terminates in nine subulated parts, which, in their length and flexure, resemble the shape of the carina; the intermediate radii are in pairs,

pairs, alternately longer. The upper filament is of a sabulato-fetaceous form, and covers the fissure of the cylindric part of the former filament; it is simple, incumbent, and answers to the situation of the former, and is shorter than it; it opens from the other at it's base, and, by this means, gives passage to a honey-like juice. The antheræ, in the whole, are usually ten: there is only one on the upper filament, but the lower one has nine, an anthera standing on every one of it's radii; they are small, equal in size, and terminate the filaments. The pistil is single; it arises from the receptacle, within the calyx. The germen is oblong, nearly cylindric, but somewhat compressed, strait, and of the length of the cylindric part of the lower filament, which incloses it. The style is filiform, but somewhat sabulated; it is ascendent, and is of the same length and situation with the radii of the filament, among which it is placed; it endures but a short time, perishing with the corolla, or soon after. The stigma is hoary, of the length of the style, and is turned upwards, and placed immediately underneath the antheræ. The fruit is an oblong, compressed, obtuse pod, or legumen, formed of two valves, with two longitudinal sutures, an upper and an under one, both strait, but the upper one defending at the base, and the lower one ascending at the apex: the pod opens at it's upper suture. The seeds are usually several, sometimes small, roundish, smooth, and pulpy; they are pendulous in the pod, and have a prominent embryo near their place of insertion; when the ovular are excluded, the cotyledons preserve the figure of halves of the seed. The peculiar, or proper, receptacles of the seeds are very small, short, and attenuated at the base, obtuse at the disk, oblong, and are inserted longitudinally and alternately along the upper upper suture of the pod; the two valves being separated, one half of the seeds therefore adheres to one, the other half to the other.

The carina in many of the flowers of the plants of this class is, in reality, composed of two petals, with their edges approximated, but not joined; but these carry all the appearance of it's being formed of a single petal, as in the others, till carefully separated.

Of the Diadelphia some have six, some eight, some ten antheræ in each flower; they may be, therefore, arranged into three orders.

Class the Seventeenth. Order the First.

DIADELPHIA HEXANDRIA.

Plants with six antheræ and two kinds of stamina.

FUMARIA.

THE stamina are two, of a membranaceous structure, and trifid.

This genus comprehends the Fumaria, Capnoides, Cysticapnos, Corydalis, Pseudo-fumaria, and Cucularia of authors.

Fumaria siliquis paniculatis linearibus, caule erecto.

The erect Fumaria, with paniculated, linear pods.

Ebergetten, podded Fumitory.

The root is fibrous: the plant rises to a foot high: the stalk is round, erect, slender, hollow, and covered with a greyish powder, which easily falls off, on rubbing; the leaves are divided into a number of short, obtuse segments, and are of a bluish colour: the flowers are small, of a variegated red and yellow colour, and stand in clusters, at the tops of the branches.

It is a native of America. Tournefort calls it, Capnoides; Cornutus and others, Fumaria siliquosa semper virens.

The other species are, 1. The common Fumitory. 2. The fine-leaved Fumitory. 3. The climbing Fumitory. 4. The great, fine-leaved Fumitory. 5. The Fumitory, with leaves divided into very long segments. 6. The little, sophia-leaved Fumitory. 7. The broad-leaved, climbing Fumitory. 8. The cordated-leaved Fumitory. 9. The red-flowered, hollow-rooted Fumitory. 10. The yellow-flowered, hollow-rooted Fumitory.

Fumitory. 11. The green-flowered, hollow-rooted Fumitory. 12. The solid, tuberous-rooted Fumitory. 13. The large-leaved Fumitory. 14. The great-flowered, obtuse-segmented Fumitory. 15. The smaller-flowered Fumitory.

Class the Seventeenth. . Order the Second.

DIADELPHIA OCTANDRIA.

Plants with eight antheræ on two kinds of filaments.

POLYGALA.

THE calyx is composed of five leaves, two of which resemble the alæ, and are coloured.

This genus comprehends the Polygaloides, Chamæbuxus, and Pentæ of authors.

Polygala foliis lineari-lanceolatis, caulibus diffusis.

Common

The diffuse-stalked Polygala, with lineari-lanceolate leaves. **Milkwort.**

The root is oblong, slender, and white: the stalks are numerous, procumbent, round, hard, and slender, and grow to four, six, or eight inches long: the leaves are about a third of an inch long, broader at the lower part of the stalk, and narrower towards the top of it; they are smooth, and of a bright green colour: the flowers form a kind of spikes, at the tops of the branches; they are moderately large, and naturally blue, but often red or white: the plant also is, sometimes, larger, and more erect, sometimes smaller, and more procumbent; and, under these several appearances, authors have made six or eight different species of it, as the red-flowered, the white-flowered, the myrtle-leaved, &c. Polygala.

It is common in our pastures. C. Bauhine calls it, Polygala vulgaris.

The other really distinct species are, 1. The pointed-leaved, taller Polygala. 2. The variegated-flowered, very narrow, and long-leaved Polygala. 3. The little-leaved, large flowered Polygala. 4. The great, shrubby, African Polygala. 5. The grassy-leaved, shrubby Polygala. 6. The great-flowered, flax-leaved, African Polygala. 7. The yellow, box-leaved, shrubby Polygala. 8. The American, long-leaved, white Polygala.

HEISTERIA.

THE calyx is composed of five leaves, and those nearly equal, and regularly arranged. This singular structure of the calyx distinguishes the Heisteria sufficiently from all the other genera of this class, without a farther description.

Class the Seventeenth. . Order the Third.

DIADELPHIA DECANDRIA.

Plants which have ten antheræ on two kinds of styles.

OF the Diadelphia Decandria there are many more genera than of either of the former series; and of these some have the filaments connected at their bases; others have the stigmata hoary, and the filaments not connected at their bases; others have the cups bilabiate, and the stigmata not hoary, nor the filaments connected; and, finally, others have the stigmata simple, not hoary, the filaments not connected, and the cups not bilabiate: they may hence be arranged into four separate divisions.

Division the First.

DIADELPHIA DECANDRIA.

Which have their filaments connected at their bases.

BRYTHRINA.

THE calyx is divided into two lips: the vexillum of the corolla is very long and lanceolated.

This genus comprehends the *Coralodendron* and *Coral* of authors.

Erythrina foliis ternatis, caule spinoso.

The Erythrina, with ternate leaves, and thorny branches.

The Coral-tree.

The root is brachlated: the tree grows to twenty-five feet high: the branches are armed with sharp thorns, especially on the younger trees: the leaves are broad, short, and somewhat cordated; they grow three on each pedicle, and several of these aggregations from the whole compound leaf: the flowers are very large, and of a fine scarlet colour.

It is a native both of the East and West Indies. Tournefort calls it, *Coralodendron triphyllum Americanum spinosum, flore ruberrimo.*

The other species are, 1. The black-seeded, trifoliate *Erythrina*. 2. The large-leaved *Erythrina*. 3. The ash-leaved *Erythrina*. 4. The single, oblong-leaved, and flat-podded *Erythrina*. 5. The yellow-flowered, pseudo-acacia-leaved *Erythrina*. 6. The smaller-leaved *Erythrina*.

SECURIDACA.

THE calyx is bilabiated; the pod is of a roundish figure, containing only a single seed, and terminating in a large ala, of an oval figure.

These characters sufficiently distinguish the *Securidaca*, without a farther description.

LUPINUS.

THE calyx is bilabiated; five of the antheræ are roundish, and the other five oblong; the pod is coriaceous.

Lupinus calycibus verticillatis, labio inferiore trifido.

The Lupine, with verticillate cups, and the lower lip trifid.

Yellow Lupine.

The root is fibrous: the stalk is round, hairy, ramose, and two feet high: the leaves are digitated, oblong, narrow, hoary on both sides, and terminate in a point: the flowers are large, yellow, and sweet; they stand at the tops of the stalks, in form of a long spike.

It is a native of Italy. C. Bauhine calls it, *Lupinus sylvestris flore luteo.*

The other species are, 1. The common, blue Lupine, with it's varieties. 2. The great, very hairy, blue Lupine. 3. The broad-leaved Lupine. 4. The narrow-leaved, purple Lupine. 5. The tall, narrow-leaved, blue Lupine. 6. The blue, perennial, creeping Lupine. 7. The little, East Indian Lupine. 8. The composite-stalked, white-flowered, garden Lupine, the seeds of which are kept in the shops.

CROTALARIA.

THE calyx is divided into three parts: the pod is turgid, inflated, and has a pedicle.

Crotalaria

*Crotalaria foliis ternatis, petiolis nudis.**The ternate-leaved Crotalaria, with naked petioles.*

The root is oblong, small, and fibrated: the stalk is round, smooth, four feet high, and ramose: the leaves are an inch long, of a roundish figure, and of a yellowish-green colour; they stand three on every pedicle, and are hoary: the flowers are moderately large, and of a yellowish-green; they stand in a kind of spikes, at the tops of the stalks.

It is a native of America. Ray calls it, *Crotalaria fruticosa fructu pubescente*.

The other species are, 1. The lanceolate-leaved *Crotalaria*. 2. The small-flowered *Crotalaria*. 3. The dwarf *Crotalaria*.

GENISTA.

THE calyx is formed into two lips: the vexillum of the corolla is oblong, and is totally reflected from the carina.

This genus comprehends the *Spartium* and *Genistella* of Tournefort, but not the *Genista* of Tournefort and others, that being the *Spartium*.

Genista foliis lanceolatis, ramis teretibus striatis.

The lanceolate-leaved Genista, with round, striated branches.

**Green-weed, or
Dyers-weed.**

The root is woody, divaricated, and spreading: the stalks are numerous, tough, round, striated, and two feet high: the leaves are oblong and narrow, of a deep green colour, and smooth: the flowers are large and yellow, and stand in large tufts, at the tops of the branches.

It is common in our pastures. C. Bauhine calls it, *Genista tinctoria*: the dyers use it for a green and a yellow.

The other species are, 1. The ramose, hypericum-leaved *Genista*. 2. The prickly, lanceolate-leaved *Genista*. 3. The herbaceous *Genista*, or *Chamaespartium* of authors. 4. The larger, prickly *Genista*. 5. The hairy and prickly *Genista*. 6. The woolly-headed, very prickly *Genista*. 7. The *Genista*, with very long and slender, tridentated points. 8. The shorter, tridentated-spined *Genista*. 9. The crooked, tridentated, prickled *Genista*. 10. The cluster-flowered *Genista*. 11. The very short, bluish-spined *Genista*. 12. The small-flowered *Genista*. 13. The little-spiked *Genista*. 14. The broad-leaved Dyers-weed. 15. The shrubby, narrow-leaved Dyers-weed. 16. The shrubby, broad leaved Dyers-weed.

SPARTIUM.

THE stigma is longitudinal and hairy in it's upper part: the filaments adhere to the carina: the calyx stands oblique downwards.

This genus comprehends the *Genista* of authors.

Spartium ramis oppositis teretibus, versus apicem floriferis, foliis lanceolatis.

The opposite, round-branched Spartium, with lanceolate leaves.

**Spanish
Broom.**

The root is brachiated: the shrub rises to six or eight feet high: the stem is brown, the twigs green, round, and tough: the leaves are oblong, and quickly fall off: the flowers are large and yellow, and stand in clusters, at the tops of the branches.

It is a native of Spain, Italy, and France. J. Bauhine calls it, *Genista juncea*.

The other species are, 1. The dwarf, sweet *Spartium*. 2. The small-flowered *Spartium*. 3. The butchers-broom-leaved *Spartium*. 4. The lavender-leaved *Spartium*. 5. The rosemary-leaved *Spartium*. 6. The little, blue-flowered *Spartium*. 7. The silvery-branched *Spartium*. 8. The purple, narrow-leaved *Spartium*. 9. The larix-leaved *Spartium*. 10. The hairy, larix-leaved *Spartium*. 11. The shrubby, spiked, larix-leaved *Spartium*. 12. The shrubby, capitated, larix-leaved *Spartium*. 13. The yellow,

yellow, spiked, larix-leaved Spartium. 14. The short, larix-leaved Spartium, with dowy heads. 15. The camphorata-leaved Spartium, with very small, yellow flowers. 16. The gallium-leaved Spartium.

B O R B O N I A.

THE stigma is emarginated: the calyx is acuminato-spinose: the pod is pointed at the extremity. These characters sufficiently distinguish the Borbonia, without a farther description.

A C H Y R O N I A.

THE stigma is acute; the pod is turgid and hairy: the vexillum is obtuse, but pointed. The characters, also, sufficiently distinguish this genus, without a farther description.

O N O N I S.

THE calyx is divided into five linear segments; the pod is turgid and sessile. This genus comprehends the Ononis of Tournefort, and the Natrix of Rivinus.

Ononis pedunculis unifloris seta terminatis.

The single-flowered Ononis, with hairy peduncles.

**Yellow
Rethbarrow.**

The root is long, tough, and creeping: the stalks are numerous, round, a foot and a half high, very ramose, and without thorns: the leaves are small, oblong, pointed, and of a pale green colour: the flowers are large and yellow, and stand one on each peduncle.

It is a native of France and Italy. C. Bauhine calls it, *Ononis viscosa spinis carens lutea major*.

The other species are, 1. The common, prickly Ononis. 2. The common Ononis, without prickles. 3. The little, procumbent Ononis, without spines. 4. The roundish-leaved, perennial Ononis. 5. The early-flowering, purple, shrubby Ononis. 6. The tridentate, fleshy-leaved, shrubby Ononis. 7. The dwarf, great-rooted Ononis. 8. The little, smooth, purple Ononis. 9. The long-spiked, alopecuroides Ononis. 10. The hairy, procumbent, sea Ononis. 11. The purple, shrubby, American Ononis. 12. The broad-leaved, yellow Ononis. 13. The narrow-leaved, variegated, sea Ononis. 14. The large, yellow-flowered, shrub Ononis. 15. The little, yellow-flowered Ononis. 16. The Asiatic, shrub Ononis, with great yellow flowers. 17. The broader, or roundish-leaved Ononis. 18. The climbing, yellow-flowered Ononis.

G A L E G A.

THE calyx is divided into five setaceous segments: the pod is cylindric, and very long.

Of this genus there is but one known species.

G A L E G A.

Goat's-rue.

The root is oblong, white, and fibrated: the plant rises to three feet high: the stalks are striated and hollow: the leaves are composed each of a great many pairs of oblong pinnae: the flowers are moderately large, and of a bluish-white colour; they stand in long spikes, on pedicles arising from the axils of the leaves.

It is a native of Italy. C. Bauhine calls it, *Galega vulgaris*.

The flowers are sometimes altogether white, and sometimes larger than ordinary: Tournefort has made two new species from these varieties.

It has been esteemed a great sudorific, but at present is little used.

A N T H Y L L I S.

ANTHYLLIS.

THE calyx is inflated, and divided into five short segments at the extremity, and covers the pod.

This genus comprehends the *Vulneraria* of Tournefort and others.

Anthyllis herbacea foliis quaterno-pinnatis floribus, lateralibus Bladder
The lateral-flowered, quaterno-pinnate-leaved *Anthyllis*. Lotus.

The root is fibrous; the stalks are numerous, procumbent, and grow to a foot in length: the leaves stand at small distances; they are composed each of two pairs of little pinnæ, and a large oval terminatory one; the flowers stand on short pedicles, arising from the axæ of the leaves; they are little and yellow, but their cups large and inflated like bladders.

It is a native of Italy. C. Bauhine calls it, *Lotus pentaphyllus vesicarius*.

The other species are, 1. The common, yellow *Anthyllis*. 2. The purple-flowered *Anthyllis*. 3. The broader-leaved *Anthyllis*. 4. The *Anthyllis*, called yellow, hoary, *Barba Jovis*. 5. The *Anthyllis*, called common *Barba Jovis*.

AMORPHA.

THE vexillum of the corolla is of an oval figure, and hollow. There are no alæ nor carina in this singular genus. There is but one known species.

AMORPHA.

The root is brachiated and fibrated; the shrub rises to four or five feet high: the branches are slender; the leaves large and pinnated; they somewhat resemble those of the common acacia; the flowers are very small and purple.

It is a native of South America. Miller calls it, *Barba Jovis pseudo-acaciæ foliis, flosculis purpureis minimis*.

Class the Seventeenth. Order the Third.

Division the Second.

Diadelphia Decandria, with hoary stigmata, and filaments not connected at the base.

ANAGYRIS.

THE vexillum of the flower is shorter than the alæ, and the alæ are shorter than the carina.

Anagyris floribus lateralibus. Stinking Bean
The *Anagyris*, with lateral flowers. Trefoil.

The root is brachiated and fibrated; the trunk is thick, woody, and covered with a brown bark; it grows to twenty feet high, and sometimes forms a regular tree, though more usually it is a shrub: the leaves are oblong and hoary, on the under side they stand three on each pedicle: the flowers are numerous, and of a beautiful yellow.

It is a native of Italy. C. Bauhine calls it, *Anagyris fetida*.

There is but one other known species of this genus, the narrower-leaved *Anagyris*.

ROBINIA.

THE vexillum of the corolla is patent, reflex, and roundish; the calyx is divided at the extremity into four short segments; the upper one is emarginated.

This genus comprehends the *Pseudo-acacia* of Tournefort and Rivinus.

Robinia pedunculis racemosis, foliis pinnatis.
The pinnated-leaved Robinia, with racemous peduncles.

The root is large and spreading; the tree grows to forty feet high; the branches are covered with a smooth bark, and have very robust and sharp spines: the leaves are pinnated; the pinne are short and broad, and there are eight or ten pairs of them in each leaf: the flowers are large and white.

It is a native of Virginia. Boerhaave calls it, *Pseudo-acacia filiquis glabris*; Linnaeus, *Robinia aculeis geminatis*.

The other species are, 1. The Robinia, with oblong pinne. 2. The Robinia, with quaternate pinne. 3. The yellow-barked, quaternate-leaved Robinia.

OROBUS.

THE style is of a linear figure; the calyx is obtuse at the base; the upper segments are short.

Orobis caule simplicissimo, foliis pluribus lanceolatis oblongis.
The simple-stalked Orobis, with numerous, oblong, lanceolate foliola.

The root is fibrous; the stalks are weak, slender, striated, and of a pale green: the leaves are pinnated; the pinne are numerous, smooth, oblong, and pointed: the flowers are moderately large and purple.

It is common in most parts of Europe. C. Bauhine calls it, *Astragalus sylvaticus foliis oblongis glabris*.

The other species are, 1. The common, purple, spring Orobis. 2. The narrower-leaved, pale red Orobis. 3. The broad-leaved, purple Orobis. 4. The narrow-leaved, tuberous-rooted Orobis. 5. The vetch-leaved Orobis. 6. The common hedge Orobis. 7. The nervous-leaved Orobis. 8. The scarlet and black seeded, American Orobis. 9. The narrow-leaved, pale-flowered Orobis.

LATHYRUS.

THE style is plane, and broadest in the upper part; the two upper segments of the cup are shorter than the others.

This genus comprehends the Clymenum and Aphaca of Tournefort, as well as his Lathyrus.

Lathyrus pedunculis multifloris, cirris diphyllis, foliis ovalibus, radice tuberosa.

The tuberous rooted, many-flowered Lathyrus, with oval leaves.

Pease Earth-nut.

The root consists of a number of long filaments, to which, in several parts, are annexed large tuberosities of an oblong or roundish figure, and white, tender substance: the stalks are weak and procumbent, unless supported; they grow to two feet long: the leaves are placed two on a pedicel, which terminates in a tendril; they are an inch long, oval, and obtuse: the flowers are numerous, large, and purple.

It is a native of most parts of Europe. C. Bauhine calls it, *Lathyrus arvensis repens tuberosus*.

The other species are, 1. The large, garden Lathyrus. 2. The great, wild Lathyrus. 3. The broad-leaved, great-flowered Lathyrus. 4. The great, narrow-leaved Lathyrus. 5. The orobis-podded, scarlet-flowered Lathyrus. 6. The very narrow-leaved, American Lathyrus. 7. The purple and yellow Lathyrus. 8. The blue-flowered, annual Lathyrus. 9. The broad-leaved, yellow Lathyrus. 10. The narrow-leaved Lathyrus, with a jointed hairy pod. 11. The very narrow-leaved, red-flowered, round-seeded Lathyrus. 12. The angular-seeded, narrow-leaved Lathyrus. 13. The capillaceous-leaved Lathyrus. 14. The scarlet-flowered, grassy Lathyrus.

Of

Of those called Clymena there are, 1. The flat-podded Clymenum. 2. The articulated-podded Clymenum. 3. The blue-flowered Clymenum.

Of the Aphaca of authors, there is but one species, viz. the yellow-flowered, bindweed-leaved Lathyrus.

P I S U M.

THE style is triangular, and carinated in it's upper part: the two upper segments of the cup are the shorter.

This genus is very nearly allied to the former; it contains the Pisum and the Ochrus of authors.

Pisum petiolis decurrentibus membranaceis diphyllis.

The Pisum, with membranaceous, decurrent petioles, with two leaves on each.

The root is fibrous; the plant grows to three feet high, if supported; the stalks are green, angular, and slender; the leaves are oblong, broad, and of a pale green: the flowers are large, and of a pale yellow; they stand on short pedicles, singly, in the axils of the leaves.

It is a native of Italy. C. Bauhine calls it, Ochrus folio integro.

The other species are, 1. The common Pea, from the several varieties of which Tournefort and others have made several imaginary species; as the green pea, the umbellated pea, the dwarf Pea, the square Pea, and the like. 2. The angulated-leaved Pea. 3. The broader-leaved Pea. 4. The yellow, woolly, American Ochrus.

V I C I A.

THE stigma is barbated on the lower side.

This genus comprehends the Cracca of Rivinus, and the Faba of Tournefort, &c.

Vicia pedunculis multifloris, foliis ovatis, infimo pari caulino.

The many-flowered Vicia, with oval leaves, the lowest pair cauline.

The root is oblong, black, and woody; the plant much resembles the common pea: the stalks are numerous, angulated, striated, and tough: the leaves stand pretty close; two broad ones, of an inch in length, surround the stalk, and from these a pedicle runs to three inches in length, with about three pairs of pinnae on it, and terminating in a tendril: the flowers are small and white, and stand in large clusters on long peduncles.

It is a native of Italy. C. Bauhine calls it, Pisum perenne.

The other species are, 1. The common Vicia or Tare. 2. The great, bush Vetch. 3. The rounder-leaved, bush Vetch. 4. The pointed-leaved Vetch. 5. The many-flowered Vetch. 6. The hoary, many-flowered Vetch. 7. The white-flowered, hairy Vetch. 8. The early, red-flowered Vetch. 9. The many-podded, hairy Vetch. 10. The single and smooth-podded Vetch. 11. The long-leaved and long-podded Vetch. 12. The broad-podded, purple-flowered Vetch. 13. The Vetch, which buries it's pods under-ground. 14. The little, early-flowering Vetch. 15. The broad-leaved, procumbent Vetch. 16. The broad and serrated-leaved, procumbent Vetch. 17. The pea-leaved Vetch. 18. The yellow-flowered Vetch, with hairy pods. 19. The yellow, smooth-podded Vetch. 20. The two-podded Vetch.

Of those called Fabæ Beans there are, 1. The common, garden Bean. 2. The smaller-fruited Bean, with serrated leaves, called the Narbon Vetch.

Authors have made many other imaginary species, out of the varieties of the common Bean: the lesser Bean, called the Horse-bean, is evidently but a variety of it.

COLUTEA.

COLUTEA.

THE pod is inflated, and opens at the upper part of the base; the calyx is bilabiate.

Colutea foliis obverse cordatis, caule arboreo.
The tree Colutea, with obversely, cordated leaves.

The root is brachiated; the trunk is woody and hollow: the branches are numerous; the leaves are long, pinnated, and of a bright green: the pinnæ short and hairy underneath: the flowers are very numerous; they hang on long pedicles in clusters, and are moderately large and yellow; the pods are inflated in manner of a bladder.

It is a native of Italy. It grows on the top of Vesuvius, where there is no other vegetable. C. Baubine calls it, *Colutea vescaria*.

The other species are, 1. The shrubby, purple-flowered *Colutea*. 2. The dwarf, Syrian, purple *Colutea*.

DOLICHOS.

THE base of the vexillum has two oblong, parallel, callous bodies, pressing the alæ.

This genus is nearly allied to the *Phaseolus*; but in that the Carina is spiral, and it is not so in this.

Dolichos leguminibus ovato-acinaciformibus, seminibus ovatis, hilo arcuato versus altam extremitatem.

The ovato-acinaciform, podded Dolichos, with oval seeds, ridged toward one end.

The root is spreading; the stalk is firm and woody, but climbs upon trees, and any thing that is near it: the leaves are large, broad, and pointed, and resemble those of the common *Phaseolus*: the flowers are large and white; the pods are long; the seeds are like those of our kidney-beans, but have a ridge near one end.

It is a native of Egypt, where it is used in food. J. Bauhine calls it, *Phaseolus lablab Alpini*.

The other species of *Dolichos* are, 1. The purple-flowered, slender-podded *Dolichos*. 2. The dwarf, yellow *Dolichos*.

PHASEOLUS.

THE carina of the flower, as also of the stamina and style, are twisted spirally.

Phaseolus corollis coccineis.
The scarlet-flowered Phaseolus.

The root is fibrous; the stalk is weak, climbing, and four or five feet long; the leaves stand three on each pedicle; they are broad at the base, and terminate in a point; the flowers are large, and of a bright scarlet.

It is a native of America. Cornutus calls it, *Phaseolus paniceo flore*; Morison, *Phaseolus Indicus flore coccineo*.

The other species are, 1. The common, garden *Phaseolus*, or Kidney-bean, with it's several varieties in the colour of the seeds, from which Tournefort and others have made several species. 2. The dwarf, black, Italian *Phaseolus*. 3. The Ceylon *Phaseolus*, with radiated pods. 4. The ivy-leaved, woolly-seeded *Phaseolus*. 5. The broad-fruited *Phaseolus*. 6. The yellow-flowered, Egyptian *Phaseolus*. 7. The narrow-leaved *Phaseolus*. 8. The little-leaved *Phaseolus*. 9. The yellow-podded *Phaseolus*. 10. The cochleated-flowered *Phaseolus*. 11. The vetch-leaved, oval-podded *Phaseolus*. 12. The very long-podded *Phaseolus*. 13. The dwarf, red-flowered, African *Phaseolus*. 14. The purple-flowered, tuberous-rooted, American *Phaseolus*.

feolus. 15. The yellow, strumous-rooted Phaseolus. 16. The great-podded, American Phaseolus. 17. The great-flowered, American Phaseolus. 18. The hairy Phaseolus, with jointed pods. 19. The falcated-podded Phaseolus. 20. The pyramidal-spiked Phaseolus, with red and black seeds. 21. The round-leaved, purple, sea Phaseolus. 22. The hairy-podded, American Phaseolus.

Class the Seventeenth. Order the Third.

Division the Third.

Diadelphia Decandria, with bilabiated cups; the stigmata not hoary, and the stamina not growing together at the base.

ULEX.

THE calyx is composed of two leaves; the pod is scarce longer than the cup. The plants of this genus have been confounded with the Genista and Genista Spartia by authors.

Ulex folio sub singulis spinis subulato-plano acuto.

The Ulex, with a plano-subulated, acute leaf under every spine.

**The Furze-
Bush.**

The root is long and divided; the trunk is firm, woody, and covered with a brown bark; the young branches are green, flexible, and beset with numerous thorns: the shrub grows to three, four, or more, feet high; the leaves are small, and fall off very soon; the flowers are large, yellow, numerous, and beautiful.

It is common on our heaths. C. Bauhine calls it, Genista spinosa major longioribus aculeis.

The other species are, 1. The arborecent, larger-leaved, African Ulex. 2. The red-flowered Ulex. 3. The shorter-spined, common Ulex. 4. The slender-spined Ulex. 5. The small-flowered Ulex.

CITYSUS.

THE calyx is bilabiate; the pod is attenuated at the base.

This genus comprehends the Cytisus of Tournefort, and the Laburnum of Rivinus.

Cytisus foliis ovato-oblongis, racemis simplicibus pendulis.

The ovato-oblong-leaved Cytisus, with simple, pendulous clusters.

**The not stinking
Bean Trefoil.**

The root is spreading; the tree grows to five and twenty feet high, and is very ramose: the wood is firm and hard; the bark of the young branches is green: the leaves stand on hairy pedicles; they are two inches long, and more than an inch broad, obtuse at the end, and hoary underneath: the flowers are moderately large and yellow; they hang in clusters, on long pendulous peduncles.

It is a native of Italy. C. Bauhine calls it, Anagyris non foetida major five Alpina; Tournefort, Cytisus flore racemoso pendulo.

The other species are, 1. The reddish, hoary Cytisus. 2. The long-podded, hoary Cytisus. 3. The great, hoary, yellow Cytisus. 4. The small-leaved, hoary Cytisus. 5. The roundish-leaved, short-pediced Cytisus. 6. The smooth, green Cytisus. 7. The narrow, complicated, hoary Cytisus. 8. The short, pendulous-flowered Cytisus. 9. The purple-spiked Cytisus. 10. The silvery, African Cytisus. 11. The prickly Cytisus, called trifoliate acacia. 12. The dwarf, narrow-leaved, silvery

silvery Cytisus. 13. The dwarf, viscous Cytisus. 14. The flax-leaved Cytisus. 15. The clustered-podded Cytisus. 16. The tall, anagyris-leaved, closter-flowered Cytisus. 17. The silvery-leaved, white-flowered Cytisus. 18. The narrow-leaved, hairy, African Cytisus. 19. The yellow, prickly, American Cytisus. 20. The silky-shrub American Cytisus.

GLYCINE.

THE calyx is bilabiate; the carina of the flower bends back the vexillum at it's top: the pod contains two cells.

This genus comprehends the Apios of Boerhaave.

Glycine foliis pinnatis conjugatis, foliolis ovato-oblongis obtusis. **Scarlet**
The conjugate, pinnated-leaved Glycine, with obtuse foliols. **Pea.**

The root is fibrous: the stalks are weak and procumbent, unless supported; they grow to two feet, or more, in length: the leaves consist of eight or nine, or more, pairs of oblong, obtuse pinnæ, set on a middle rib, with no odd leaf at the end: the flowers are large, and stand several on the same pedicle: the fruit is a short pod, in which are several hard, scarlet seeds, spotted with black.

It is a native of Egypt, and the East Indies. Vesslingius calls it, Abrus; Van Rhee, Konni; C. Bauhine, Pisum minus coccineum.

The other species are, 1. The tuberous-rooted, ash-leaved Glycine. 2. The larger-flowered Glycine.

ARACHIS.

THE calyx is divided into two parts; the pod is cylindric, coriaceous, knotty, and contains two seeds.

This genus comprehends the Arachidna and the Arachidnoides of authors.

Arachis quadrifolia.
The four-leaved Arachis.

The root is oblong, thick, and fibrated: the plant rises to a foot and a half high; the stalks are square, striated, hairy, and ramose; the leaves stand four together, in two pairs; they are an inch long, and three quarters of an inch broad, and somewhat hoary underneath: the flowers are moderately large and yellow; they stand on short pedicles, arising from the axæ of the leaves.

It is a native of Peru and the Brasils; it's pods are usually buried in the ground.

GLYCYRRHIZA.

THE calyx is bilabiate; the pod is of an oval figure, and compressed.

1. *Glycyrrhiza leguminibus ebinatis.*
The ebinated-podded Glycyrrhiza.

Rough-headed
Liquorice.

The root is long, and often an inch and a half in diameter: the plant grows to six feet high; the leaves are pinnated and long; the pinnules are short and obtuse, and viscous to the touch: the flowers are small and blue; they stand in clusters on short pedicles, arising from the axæ of the leaves; the pods are short and echinated, and stand in clusters, so as to form a compact head.

It is a native of Tartary. C. Bauhine calls it, Glycyrrhiza capite echinato.

This was the true Glycyrrhiza or Liquorice of the Greeks.

2. *Glycyrrhiza*

2. *Glycyrrhiza leguminibus glabris.*
The smooth-podded Liquorice.

Common
 Liquorice.

The root is a yard long, and as thick as a man's thumb: the plant grows to four feet high: the stalk is round, firm, hairy, and viscous; the leaves are pinnated, and the foliola obtuse: the flowers are small and purplish, or bluish, they stand in clusters: the pods are short and smooth.

It is a native of Germany. C. Bauhine calls it, *Glycyrrhiza siliquosa* five Germanica. Its root is a famous pectoral, used in the shops, in decoctions, in the inspissated juice, &c.

ÆSCHYNOMENE.

THE calyx is bilabiate: the pod is articulated, strait, and compressed.

Æschynomene caule scabro, folio infimo quadripinni.

The rough-stalked Æschynomene, with the lower leaf quadripinnate.

The root is oblong, divaricated, and fibrated, woody, and of a yellowish colour: the stalk is robust, round, hairy, and four feet high: the leaves are composed of short, obtuse pinnules: the flowers are small; the pods rough and articulated.

It is a native of Ceylon. Tournefort calls it, *Hedyarum annuum majus mimosaefoliis*. Breynius, *Mimosa non spinosa major Zeylonica*.

The other species are, 1. The smaller, short-leaved *Æschynomene*. 2. The larger-flowered *Æschynomene*.

CORONILLA.

THE calyx is bilabiate; the upper denticulations grow together: the vexillum of the corolla is scarce longer than the alæ.

This genus comprehends the *Coronilla*, *Emerus*, and *Securidaca* of authors.

1. *Coronilla fruticosa leguminibus seretibus, pedunculis multifloris.*

The many-flowered, shrubby Coronilla, with cylindric pods.

The root is long, hard, and woody; the plant is shrubby, but very low; the twigs are green and tough: the leaves stand four or five pairs on a rib; they are of a bluish green, and short: the flowers are moderately large and yellow, and stand in clusters at the tops of the branches.

Clusius calls it, *Polygala Valentina*; C. Bauhine, *Polygala altera*.

It is a native of Italy.

2. *Coronilla herbacea leguminibus falcato-gladiatis.*

The herbaceous Coronilla, with falcato-gladiated pods.

Yellow hatch:
 et Vetch.

The root is long and tough; the stalks are numerous, procumbent, and grow to two feet long: the leaves are pinnated: the pinnæ are six or eight pairs on each; they are broad, smooth, and short: the flowers stand in clusters like umbels; they are small and yellow.

It is a native of Spain. C. Bauhine calls it, *Securidaca lutea major*.

The other species are, 1. The fungus-stalked *Coronilla*. 2. The bluish-leaved, maritime *Coronilla*. 3. The thick-podded *Coronilla*. 4. The Cretic, silvery *Coronilla*. 5. The least *Coronilla*, with clustered pods.

Of those called *Emerus* are, 1. The great *Emerus*. 2. The lesser scorpioid *Emerus*. 3. The crooked-podded *Emerus*.

Class the Seventeenth. Order the Third.

Division the Fourth.

Diadelphia Decandria, with the stigma simple; the filaments not connected at the base, the cup not bilabiate, and the stigma itself not boary.

C I C E R.

THE calyx is divided into five parts, and is of the length of the corolla: the pod is of a rhombic shape.

This genus comprehends the Cicer and Lens of Tournefort, and some of the *Craecce* of Rivinus.

1. *Cicer foliis ferratis.*
The serrated-leaved Cicer.

**Chiches, or
Chich Pease.**

The root is oblong, white, and fibrated; the stalks are erect, firm, hairy, and ramose: the leaves are pinnated; the pinnae numerous, broad, and serrated: the flowers stand on pedicles arising from the axils of the leaves; they are small and purplish, or white: the pod is short and inflated; the seeds are two or three in each, and are of the size of peas.

It is a native of Spain. C. Bauhine and others call it, *Cicer sativum*. The seeds were once kept in the shops, to be used in cataplasms, &c. but they are now disregarded.

2. *Cicer pedunculis bifloris, foliis integerrimis, stipulis indivisis.* **The
The two-flowered Cicer, with undivided leaves and stipule. Lentil.**

The root is white, oblong, fibrated, and tough; the stalks are ten inches high, ramose and procumbent: the leaves are pinnated; the pinnae oblong, hairy, narrow, and pointed: the flowers are small and white; they grow two together on stalks, arising from the axils of the leaves: the pods are short, broad, compressed, and smooth; the seeds are flattened.

It is a native of the South of France. C. Bauhine calls it, *Lens major*; others, *Lens vulgaris*.

The other species of Cicer are, 1. The Cicer, with pendulous pods, called by some *Ervum* and *Orobus*. 2. The larger and darker-seeded Cicer. 3. The great, perennial Cicer.

E R V U M.

THE calyx is divided into five parts, and is of the length of the corolla: the germen is transversely plicated.

Orobus leguminibus articulatis, semine majore.
The articulated-podded, large-seeded Orobus.

The root is oblong, tough, and fibrated; the stalks are numerous, angular, weak, and about a foot and half high: the leaves are pinnated; the pinnae small, obtuse, and ten or twelve pairs stand on each rib, with no odd leaf at the extremity: the flowers are small, of a bluish white, and stand one or two together on pedicles, arising from the axils of the leaves: the pods are an inch long, slender and jointed.

It is a native of Italy. J. Bauhine calls it, *Orobus five Ervum multis*.

The other species are, 1. The pale, purple-flowered *Ervum*. 2. The small-seeded *Ervum*. 3. The triangular-seeded *Ervum*.

ASTRAGALUS.

ASTRAGALUS.

THE legumen, or pod, is gibbous, and contains two cells.

This genus contains the Astragalus of Tournefort and others, and the Glaux of Rivinus.

Astragalus caulescens procumbens, leguminibus scrotiformibus inflatis pilosis.
The caulescent, procumbent Astragalus, with hairy, inflated pods, resembling a scrotum.

The root is oblong and woody: the stalks are numerous: the leaves are pinnated; the pinne are short, broad, and hairy: the flowers stand in little clusters, on pedicles, rising from the axæ of the leaves; they are of a pale yellow colour: the pods are short, inflated, blackish, and contain each two series of seeds, in two cells.

It is a native of Switzerland. Camerarius calls it, Cicer sylvestre; others, Astragalus perennis vesiculosus.

The other species are, 1. The tuberous, climbing, ash-leaved Astragalus. 2. The spicated, purple Astragalus. 3. The pale blue, vetch-flowered Astragalus. 4. The pale-flowered Astragalus, called spiked Onobrychis. 5. The yellow, procumbent Astragalus, called wild Liquorice, and wild Fœnugreek. 6. The crooked-podded, yellow Astragalus. 7. The broad-leaved, procumbent Astragalus. 8. The procumbent, sea Astragalus. 9. The narrow-leaved, blue Astragalus. 10. The narrow-leaved Astragalus, with flowers on long pedicles. 11. The sweet, yellow, African Astragalus. 12. The greenish, yellow-flowered Astragalus. 13. The tall, white Astragalus. 14. The hoary Astragalus, with crooked pods. 15. The purple, mountain Astragalus, or Glaux. 16. The procumbent, vetch-leaved Astragalus. 17. The tragacanth-leaved Astragalus. 18. The glomerated-flowered, tragacanth-leaved Astragalus. 19. The yellow-flowered, vetch-leaved, Alpine Astragalus. 20. The barba Jovis-leaved, simple-stalked, yellow Astragalus. 21. The Siberian Astragalus, with crooked, pointed pods. 22. The very short-stalked, Russian Astragalus.

BISERRULA.

THE legumen, or pod, is plane, and has two cells, separated by a transverse dissepimentum.

This genus comprehends the Pelecinus of Tournefort, and the Utrique serrata of Rivinus.

Biserrula leguminibus recurvis utrinque dentatis.
The Biserrula, with crooked pods, dentated on each side.

The root is oblong and slender: the stalks are numerous, slender, and ramose: the leaves are pinnated; the pinne very numerous, small, and cordate: the flowers are small and reddish, and stand in clusters, on long pedicles: the pods are an inch long, crooked, and serrated.

It is a native of Italy. C. Bauhine calls it, Securidaca filiquis planis utrinque dentatis; Tournefort, Pelecinus vulgaris.

TRAGACANTHA.

THE legumen, or pod, is of a roundish figure, and contains two cells.

Tragacantha spinis longioribus.
The long-spined Tragacantha.

The Gum Tragacantha-shrub.

The root is white, woody, tough, and spreading: the shrub grows to four feet high: the stem is robust and firm; the branches numerous; the spines very frequent, long, white,

white, and sharp: the leaves are short, pinnated, and of a whitish colour; the pinnae are small: the flowers are white, and moderately large.

It is a native of many parts of France. C. Bauhine calls it, *Tragacantha vulgaris*.

The Gum Tragacanth of the shops is obtained by wounding the stem of this shrub.

The other species are, 1. The purple-flowered, ever-green, Alpine Tragacanth. 2. The woolly Tragacanth, called *Poterium*. 3. The larger-leaved Tragacanth.

PHACA.

THE legumen, or pod, is but imperfectly divided into two cells within. This genus comprehends the *Astragaloides* of Tournefort.

Phaca incana leguminibus brevis.
The short-podded, hoary-leaved *Phaca*.

The root is remarkably thick, black on the outside, and fibrated: the stalks are numerous, angular, as thick as a man's figure, and hoary: the leaves are pinnated; the pinnae short and hoary: the flowers stand in a kind of spikes, on pedicles, rising from the axils of the leaves; they are large and white.

It is a native of Italy. C. Bauhine calls it, *Astragalus lanuginosus radice amplissima*.

The other species are, 1. The yellow-flowered Siberian *Phaca*. 2. The narrow-leaved *Phaca*.

HEDYSARUM.

THE carina of the corolla is transversely obtuse: the articulations of the legumen, or pod, contain each a single seed.

This genus comprehends the *Hedysarum*, *Onobrychis*, and *Alcagi* of Tournefort.

Hedysarum foliis pinnatis, leguminibus articulatis, aculeatis, nudis, caule diffuso.

The diffuse-stalked, pinnated-leaved *Hedysarum*, with naked, aculeated, and articulated pods. French
honey-suckle.

The root is long, thick, and divaricated: the stalks are procumbent, four or five feet long, hollow, smooth, and thick: the leaves are pinnated; the pinnae large, broad, obtuse, and hairy at their edges: the flowers are large and beautiful; they stand on long pedicles, in clusters, and are of a fine red colour.

It is a native of Italy. C. Bauhine calls it, *Onobrychis femine clypeato aspero major*; others, *Hedysarum clypeatum*.

The other species are, 1. The undulated, crooked-podded *Hedysarum*. 2. The purple *Hedysarum*, with prickly pods. 3. The roundish-podded *Hedysarum*. 4. The smooth-podded, blue, Siberian *Hedysarum*. 5. The ternate-leaved, American *Hedysarum*. 6. The ternate-leaved, shrubby, procumbent *Hedysarum*. 7. The capers-leaved, dwarf *Hedysarum*. 8. The little, purple *Hedysarum*. 9. The single, acuminate-leaved *Hedysarum*. 10. The single, roundish-leaved *Hedysarum*. 11. The two-leaved, yellow-flowered *Hedysarum*. 12. The trifoliate *Hedysarum*, with distorted pods. 13. The procumbent, hairy *Hedysarum*. 14. The large-flowered *Hedysarum*.

Of those called *Onobrychis* by authors, beside the beforementioned, there are, 1. The pale-flowered, common *Onobrychis*. 2. The vetch-leaved, scarlet *Onobrychis*. 3. The narrow-leaved *Onobrychis*. 4. The great-fruited *Onobrychis*.

ORNITHOPUS.

THE legumen is articulated, cylindric, and spirally crooked.

This genus comprehends the *Ornithopodium* of Tournefort, and the *Scorpiurus* of Rivinus.

Ornithopus

Ornithopus foliis pinnatis, leguminibus subarcuatis.
The pinnated-leaved Ornithopus, with arcuated pods.

**Bird's
 foot.**

The root is oblong and white: the stalks are numerous, procumbent, slender, hairy, and six inches long: the leaves are pinnated, and an inch, or more, in length; the pinnae are numerous, and very small: the flowers are very minute, but of a beautiful mixture of white and red; they stand three or four together: the pods are near half an inch long, crooked, and much resemble the toes of a bird's foot.

It is common in dry pastures. C. Bauhine calls it, *Ornithopodium minus*.

The other species are, 1. The larger, yellow-flowered *Ornithopus*. 2. The tuberous-rooted *Ornithopus*. 3. The scorpioid *Ornithopus*, with compressed pods. 4. The scorpioid *Ornithopus*, with cylindric pods. 5. The undulated-podded *Ornithopus*. 6. The purflane-leaved *Ornithopus*.

SCORPIURUS.

THE legumen is intercepted with isthmi, and is cylindric, bent back, and revolute.

This genus comprehends the *Scorpioides* of Tournefort, and the *Campoides* of Rivinus.

There is but one known species of it.

SCORPIURUS.

Rough Caterpillars.

The root is oblong, yellow, and tough: the stalks are numerous, procumbent, round, hairy, and a foot long: the leaves are oblong and broad, obtuse at the ends, of a bluish-green colour, and a little hairy; they stand on long pedicles, and have each two auriculae at the base: the flowers are yellow; they stand singly on long pedicles, rising from the axils of the leaves: the pod is contorted, and resembles a caterpillar.

It is a native of France. C. Bauhine calls it, *Scorpioides beupleuri folio*.

The pod varies in the degree of contortion, and other accidents, and hence have been made several new species.

HIPPOCREPIS.

THE pod is crooked and compressed, and is emarginated in several places, along one of the sutures.

Hippocrepis leguminibus confertis margine exteriori lobatis.

The cluster-podded Hippocrepis, with the exterior edge of the pod lobated.

**Common horse-
 shoe Vetch.**

The root is very long, slender, and blackish: the stalks are numerous, procumbent, and ramose, eight inches long, slender, and often reddish: the leaves are pinnated; the pinnae are small and irregular: the flowers stand in little clusters, on long, naked pedicles; they are of a deep yellow colour, and pendulous: the pods are arcuated, and, in some degree, resemble the figure of a horse-shoe.

It is a native of England, but not common. C. Bauhine calls it, *Ferrum equinum* *siliquis in summitate*.

The other species are, 1. The single-podded *Hippocrepis*. 2. The many-podded, taller *Hippocrepis*.

MEDICAGO.

THE pod is compressed, and of a cochleated figure: the carina of the corolla bends from the vexillum.

This genus comprehends the *Medicago*, *Medica*, *Falcata*, and *Cochleata* of authors.

Medicago

Medicago pedunculis racemosis, leguminibus contortis, caule recto glabro.

The racemose, contorted-podded Medicago, with an erect, smooth stalk.

Lucerne, or
Medic Fodder.

The root is very long, thick, and perennial: the stalks are numerous, round, erect, and two feet high: the leaves stand three on a pedicle, as in the trefoils; they are oblong, obtuse, and crenate: the flowers are numerous, of a purplish colour, and arranged in form of a spike: the pods are crooked.

It is a native of Spain. Clusius calls it, *Medica legitima*; Lobel, *Fœnum Burgundicum*.

The other species are, 1. The cochleated Medicago, with black, hispid pods. 2. The kidney-shaped, podded Medicago. 3. The striated and falcated-podded Medicago. 4. The shrubby, hoary Medicago, called by some the crooked-podded *Cytisus*. 5. The yellow, erect Medicago. 6. The small, yellow-flowered Medicago. 7. The sea, yellow-flowered Medicago. 8. The spotted and cordated-leaved Medicago. 9. The great, turbinated-fruited Medicago. 10. The hairy Medicago, with rigid pods. 11. The dwarf, echinated Medicago. 12. The obtuse-leaved, coronated Medicago. 13. The obtuse-leaved, many-podded Medicago. 14. The cut-leaved Medicago. 15. The ciliated-podded Medicago. 16. The perennial, round-podded Medicago. 17. The great-podded Medicago, with reflex spines. 18. The oval-fruited Medicago, with rigid spines. 19. The great, prickly, sea Medicago. 20. The thick, hoary, cordated-leaved Medicago. 21. The great-fruited Medicago, with spines bent downwards. 22. The trefoil-like Medicago, with falcated pods. 23. The Spanish, vulneraria-like Medicago. 24. The Cretic, falcated-podded Medicago. 25. The great, smooth-fruited Medicago.

TRIGONELLA.

THE vexillum and alæ of the corolla are nearly equal, and patent: the flower seems tripetalous.

This genus comprehends the *Fœnumgræcum* of Tournefort and others.

Trigonella leguminibus sessilibus striatis subsalcatis acuminatis.

The Trigonella, with striated, acuminate, and somewhat falcated pods.

Fœnugreek.

The root is oblong, white, slender, tough, and woody: the plant rises to about eight inches high: the leaves are like those of the common trefoil, three on a pedicle: the flowers stand in the alæ of the leaves, and are large and white, with a cast of bluish: the pods are four inches long, and falcated.

It is a native of France, but is sown in fields in many parts of Europe. C. Bauhine calls it, *Fœnumgræcum sativum*.

Its seed is the *Fœnugreek* of the shops, an emollient used in cataplasms, and other external applications, and an ingredient in some compositions.

The other species are, 1. The shorter-podded, wild Trigonella. 2. The little, Arabian Trigonella. 3. The many-podded Trigonella. 4. The great Trigonella, with numerous, long pods. 5. The ornithopodium-podded Trigonella. 6. The procumbent, Siberian Trigonella, with compressed, membranaceous pods.

TRIFOLIUM.

THE flowers are collected together in a kind of heads: the pods are hardly longer than the cups.

This genus comprehends the *Trifolium*, *Melilotus*, and *Lagopus* of authors.

Trifolium

Trifolium erectum floribus racemosis, leguminibus nudis diffusis.

The erect Trefoil, with clustered flowers, and naked, two-seeded pods.

Melilot.

The root is oblong, white, slender, and fibrated: the stalks are round, green, erect, hollow, and two feet high: the leaves are oblong, serrated, and stand three on the same pedicle: the flowers are yellow, and small, and stand in long spikes, on pedicles rising from the axils of the leaves.

It is common in our pastures. C. Bauhine calls it, *Melilotus officinarum* Germaniz. It has been much used as an emollient.

The other species of *Trifolium* are extremely numerous. Of those called *Melilot* there are, 1. The great, white *Melilot*. 2. The narrow-leaved, creeping *Melilot*. 3. The round-podded, erect *Melilot*. 4. The spotted-leaved *Melilot*. 5. The many-seeded, procumbent *Melilot*. 6. The narrow-leaved *Melilot*. 7. The crooked-podded *Melilot*. 8. The great, sweet, crooked-podded *Melilot*. 9. The long, rough-podded, procumbent *Melilot*. 10. The reflex-podded, Egyptian *Melilot*. 11. The whole-leaved, oriental *Melilot*. 12. The little, erect, thick-podded *Melilot*. 13. The coronated, Syrian *Melilot*. 14. The bladdery, American *Melilot*.

Of those called simply *Trefoils* there are, 1. The sweet-scented *Trefoil*. 2. The common, red *Trefoil*. 3. The longer-leaved, red *Trefoil*. 4. The shorter-leaved, small-headed, red *Trefoil*. 5. The common, white *Trefoil*. 6. The purple, foliculated *Trefoil*. 7. The greater, hop *Trefoil*. 8. The lesser, hop *Trefoil*. 9. The smallest, hop *Trefoil*. 10. The crenated-leaved, red *Trefoil*. 11. The obtuse-leaved, crenated, red *Trefoil*. 12. The round-spiked, pale-red *Trefoil*. 13. The stellate and foliculate-headed *Trefoil*. 14. The purple, stellate *Trefoil*. 15. The diphascus-headed *Trefoil*. 16. The erect, globose-headed *Trefoil*. 17. The procumbent, globose-headed *Trefoil*. 18. The soft-headed *Trefoil*. 19. The rounder, soft-headed *Trefoil*. 20. The round and rough-headed *Trefoil*. 21. The thyme-headed *Trefoil*. 22. The strawberry *Trefoil*. 23. The subterranean *Trefoil*. 24. The hairy, small-flowered, red *Trefoil*. 25. The quadrifoliate, garden *Trefoil*, improperly so called.

Of those called *Lagopus* there are, 1. The great, rounder-headed *Lagopus*. 2. The great, long-headed *Lagopus*. 3. The very long, red-headed *Lagopus*. 4. The very long and slender-headed *Lagopus*. 5. The narrow-leaved *Lagopus*. 6. The narrow-leaved, pale, red-headed *Lagopus*. 7. The common, little, field *Lagopus*. 8. The yellowish-flowered *Lagopus*.

L O T U S.

THE pod is cylindric and slender: the axils of the flower are longitudinally connivent upwards: the calyx is tubulous.

Lotus leguminibus solitariis membranaceo-quadrangularibus.

The single-podded Lotus, with membranaceo-quadrangular pods.

Square-podded Vetch.

The root is slender, oblong, and white: the stalks are numerous, round, hairy, oblique, ramose, and a foot long: the leaves are placed three at a joint, the two lower ones surrounding the stalk: the flowers are single, on pedicles of an inch and a half long, with a leaf at the base of the cup: they are moderately large, and of a beautiful crimson colour: the pods are an inch and a half long.

It is a native of Sicily. C. Bauhine calls it, *Lotus ruber siliqua angulata*.

The other species are, 1. The little, smooth, five-leaved *Lotus*. 2. The narrower-leaved, little, smooth *Lotus*. 3. The hairy *Lotus*, with slender pods. 4. The larger-flowered, yellow *Lotus*. 5. The hoary, whitish-leaved *Lotus*. 6. The smooth-leaved, shrubby *Lotus*. 7. The spotted-leaved *Lotus*. 8. The hairy, very white *Lotus*. 9. The silvery, Cretic *Lotus*. 10. The long-podded, yellow, Cretic *Lotus*. 11. The tall,

tall, hairy, glomerated-flowered Lotus. 12. The smooth, fattish-leaved, sea Lotus. 13. The corniculated-podded Lotus. 14. The bird's-foot-podded Lotus. 15. The larger, crooked-podded Lotus. 16. The jointed-podded Lotus. 17. The great, yellow, Portugal Lotus.

DORYCNIUM.

THE pod is of a roundish figure: the vexillum of the flower is obversely cordated, and reflex.

Dorycnium fruticosum foliis angustis.
The shrubby, narrow-leaved Dorycnium.

The root is oblong, thick, hard, woody, and black: the shrub rises to three feet high, and is all over of a white, hoary colour: the leaves stand three, four, or five together, without pedicles, surrounding the stalk in a radiated manner: the flowers are white, and much resemble those of the common white trefoil; they stand in a kind of heads, at the tops of the branches.

It is a native of France. C. Bauhine calls it, *Trifolium album angustifolium floribus congestis*.

There are but two other known species, 1. The taller, broader-leaved Dorycnium, 2. The larger-flowered Dorycnium.

PSORALEA.

THE calyx is full of little, scabrous protuberances, and is of the length of the pod: the pod contains only one seed.

Psoralea foliis pinnatis.
The pinnated-leaved Psoralea.

The Itch-
tree.

The root is spreading: the shrub grows to eight feet high: the leaves are pinnated; the pinnae small, narrow, and linear: the flowers are moderately large, and of a beautiful blue colour: the pods short.

It is a native of Ethiopia. Rivinus calls it, *Spartium Africanum*; others have made it a dorycnium.

The other species are, 1. The Psoralea, called the bituminous Trefoil. 2. The digitated, quinate-leaved Psoralea. 3. The single, oval-leaved Psoralea.

CLITORIA.

THE vexillum of the flower is very large, patent, and plicatile.

This genus comprehends the Ternatea of Tournefort, and Clitoria of Dillenius.

Clitoria foliis pinnatis.
The pinnated-leaved Clitoria.

The Clitoris
flower.

The root is oblong and slender: the stalk is round, green, and moderately thick: the leaves are pinnated; the pinnae short, broad, and obtuse: the flowers are very large, and of a beautiful blue colour.

It is a native of the island of Ternata. Commelin calls it, *Phaseolus Indicus glycyrrhizæ foliis, flore amplo cæruleo*.

There is but one other known species of it, which is the trifoliate Clitoria.

INDIGOFERA.

THE calyx is plane: the ake of the flower are connivent at their upper edges, and are of the same figure with the vexillum.

Indigofera





16

Gomnium 23



17



Hermannia



Pumaria



Golega

Coronilla 3



Sida



Polygala



Lupinus



Phaseolus



Lentis



Hippocrepis



Ornithopus



Gypsophium



Cytisus



Lathyrus



Astragalus



Scorpiurus



Alcea



Spachium



Robinia



Dorycnium



Medicago

B. de la Chap.



Indigofera leguminibus arcuatis incanis, racemis folio brevioribus.

The Indigofera, with arcuated, hoary pods, and with the clusters shorter than the leaves.

The Indigo Plant.

The root is oblong and divaricated: the stalks are numerous, woody, and three feet high; they are round, of the thickness of one's little finger, and of a greyish colour: the leaves are pinnated; the pinnæ are numerous and small: the flowers are small, and stand in clusters at the tops of the stalks; they are often reddish, and often merely white.

It is a native of both the East and West Indies. Morison calls it, Anil, five Indigo Indica.

The preparation, called Indigo blue, is made from the juice of this herb.

DALEA.

THE corolla consists of five petals, four of which are equal and strait; the fifth, or upper one, is very small: the pod contains a single seed.

These characters sufficiently distinguish it from all other genera of this class, without a farther description.

Class the Eighteenth.

POLYADELPHIA.

Plants which have the stamina connected together at their bases into several series.

OF these, as there can be no classical character established, the generical ones must be given at large.

Of the Polyadelphia some have only five stamina, some have twenty, and others a much larger and indeterminate number: they may, therefore, be conveniently arranged, according to these differences, into three orders.

Class the Eighteenth. Order the First.

POLYADELPHIA PENTANDRIA.

Plants which have only five stamina, separately connected at their bases.

THEOBROMA.

THE calyx is a perianthium, composed of three reflexo-patent leaves; these are of an oval figure, hollow, and deciduous: the corolla consists of five erecto-patent, concavo-galeated petals, each of them armed with a bifid seta: the nectarium is of a campanulated figure, and erecto-patent; it is smaller than the petals, and consists of five ovato-lanceolate, connected leaves: the stamina are subulated filaments, of the length of the nectarium, on which they grow, in manner of rays; each of these is divided into five parts at the top, and on each there are five antheræ, covered with the hollowed petal: the germen is of an oval figure; the style is subulated, and of the length of the nectarium: the stigma is simple; the fruit is a woody cortex, of an unequal surface, with five ridges, and has seeds lodged in five series, within it; these are numerous, fleshy, and nearly of an oval figure.

This genus comprehends the Cacao of Tournefort, and the Guazuma of Plumier.

The Cacao has an oblong, quinquangular pod, lengthened at each extremity.

The Guazuma has a globose fruit, covered with tubercles, and it's rind is perforated in manner of a sieve; within it there are five cells.

Theobroma

Theobroma fructu oblongo.
The oblong-fruited Theobroma.

**The Chocolate
 Nut-tree.**

The root is brachiata and large; the tree is not very tall, but it is of a very elegant form, and, when loaded with it's fruit, is of great beauty: the trunk is as thick as a man's leg, and about five feet high: the branches are numerous; the leaves are ten inches long, and four and a half broad, thin, and of a bright green: the flowers grow on separate hairy pedicles, an inch or two in length from the trunk and branches of the trees; they are small and yellowish: the fruit is oblong, hard, six inches in length, and contains in it the seeds which make our chocolate.

It is a native of America, C. Bauhine calls it, *Amygdalis similis Guatimalensis*. There is but one other known species of *Theobroma*, that is, the round-fruited *Theobroma*.

Class the Eighteenth. Order the Second.

POLYADELPHIA ICOSANDRIA.

Plants that have twenty stamina connected into several series at their bases.

CITRUS.

THE calyx is a very small, deciduous perianthium, formed of one leaf, plane at the base, and divided into five denticulations at the top: the corolla consists of five, oblong, plane, patent petals: the stamina are about twenty subulated, compressed filaments, erect, and placed in a circular manner, and coalescing into several bodies, composed of various numbers of them at the base: the antheræ are oblong; the germen is roundish: the style is cylindric, and of the length of the stamina: the stigma is globose, and has nine partitions within it: the fruit is a berry, covered with a thick, fleshy rind, the pulp being formed into vesicles, and having nine cells: the seeds are two in each; they are of a suboval figure, and callous substance.

This genus comprehends the *Aurantium*, *Citrum*, and *Limon* of Tournefort and others. In the *Aurantium*, the petioles are cordated. In the *Citrum*, the petioles are naked and simple. The *Limon*, Tournefort says, is easily distinguished from both, by it's figure. But these are specific, not generical, distinctions.

Citrus petiolis linearibus.
The Citrus, with linear petioles.

**The Citron-
 tree.**

The root is brachiata and spreading: the tree grows to fifteen feet, or more, in height: the bark is brown; the young shoots are tough, and very flexible: the leaves are large, oblong, broadest in the middle, and of a beautiful bright green: the flowers are large, white, and extremely fragrant: the fruit is larger than the lemon, but much resembles it in shape and colour; it's surface is usually uneven, often full of large protuberances.

It is a native of Persia. C. Bauhine calls it, *Malus Medica*; others, *Citream vulgare*.

The other species of *Citrus* are, 1. The *Aurantium Vulgare*, or *Aurantia Mala*; and, 2. The *Limon Vulgaris*, or the common Orange and Lemon. Of both these there are many varieties in the shape and size of the fruit, which authors have made distinct species.

Class

Class the Eighteenth. Order the Third.

POLYADELPHIA POLYANDRIA.

Plants which have very numerous stamina connected together, into several series at their bases.

HYPERICUM.

THE calyx is a permanent perianthium, lightly divided into five oval, hollow segments: the corolla consists of five oblong, oval, obtuse, patent petals: the stamina are numerous filaments, nearly of the length of the corolla; they are slender, and are connected at their bases into five distinct series: the antheræ are small; the germen is roundish; the styles are usually three, sometimes but two, sometimes five; they are distant, and of the length of the stamina: the stigmata are simple: the fruit is a roundish capsule, having as many cells as there are styles in the flower; the seeds are numerous and oblong.

This genus comprehends the Androsæmum and Ascyrum of Tournefort. The Ascyrum has five styles, and the seeds simple: the Hypericum has three styles, and the pericarpium membranaceous: and the Androsæmum has three styles, and the pericarpium soft and coloured.

Hypericum corollis pentagynis, caule tetragono-herbaceo simplici, foliis lævibus integerrimis.

The square, herbaceous-stalked Hypericum, with five styles, and with smooth, undivided leaves.

The root is fibrous and spreading; the stalks are numerous, oblique, a foot long, square, tough, and firm, and usually brownish: the leaves are an inch and half long, near an inch broad, firm, even at the edges, and of a pale green; they stand in pairs: the flowers are an inch and a half in diameter, of a beautiful yellow colour, and have a vast number of stamina in the middle: the fruit is a large, dry capsule, containing five cells.

It is a native of the East Indies, but is common in our gardens. Morison calls it, Androsæmum flore et theca quinquecapsulari omnium maximis.

The other species are, 1. The great, berry-bearing Androsæmum, or Tutsan. 2. The common St John's-wort. 3. The nummularia-leaved Hypericum. 4. The Syrian, short-leaved Hypericum. 5. The Hypericum, with a curled, triangular leaf. 6. The little, erect Hypericum, called Tragus's pretty Hypericum. 7. The little, procumbent Hypericum. 8. The larger, woolly, procumbent Hypericum. 9. The lesser, woolly, procumbent Hypericum. 10. The marsh, woolly, procumbent Hypericum, called Marsh St Peter's-wort. 11. The hairy, erect, round-stalked Hypericum. 12. The oriental Hypericum, with leaves hairy at their edges. 13. The simple-stalked, elegant, broad-leaved Hypericum. 14. The large, perfoliate-leaved Hypericum. 15. The square-stalked Hypericum, called common St Peter's-wort. 16. The fine, glaucous-leaved, stone Hypericum. 17. The stinking, shrubby Hypericum. 18. The large-flowered, perfoliate Hypericum. 19. The low, Alpine Hypericum, with large flowers. 20. The myrtle-leaved Hypericum. 21. The toad-flax-leaved Hypericum. 22. The least, woolly Hypericum. 23. The small-leaved Hypericum, with very large flowers, or Hypericum of mount Olympus. 24. The erect, willow-leaved Hypericum.

ASCYRUM.

THE calyx is a permanent perianthium, composed of four leaves; the two exterior very small, placed opposite and linear; the two interior large, plane, erect, and cordate: the corolla consists of four oval petals; the two exterior ones opposite and very large; the interior smaller: the stamina are numerous, capillary filaments,

ments, connected at their bases into four separate bodies: the antheræ are roundish; the germen is oblong; there is scarce any style; the stigma is simple: the fruit is an oblong, pointed capsule, formed of two valves, and included in the larger leaves of the calyx; the seeds are numerous, small, and round.

It is an American described by Plumier. The characters sufficiently distinguish it, without any farther description.

Class the Nineteenth.

SYNGENESIA.

Plants, whose antheræ coalesce into a cylinder.

This class comprehends the Herbæ flore compositæ of Tournefort, Ray, and others.

The classical characters of the flowers of these plants, called Composite Flowers, are as follow.

The character of the single Floscule is this:

THE calyx is a kind of corona of the seed, placed on the summit of the germen: the corolla is formed of a single petal: the tube is very narrow, very long, and situate on the germen, and is either tubulated or ligulated, or wholly without a limb.

In the tubulated corolla, the limb is of a campanulated figure, divided into five reflexo-patent segments. In the ligulated corolla, the limb is linear, plane, and turned outwards; and it's extremity is sometimes entire, sometimes divided into three, or into five, segments, or truncated. Where there is no limb at all, there is often also no tube.

The stamina are five very short, capillary filaments, inserted into the neck of the corolla: the antheræ are five, linear and erect, and they coalesce at their sides, so as to form a kind of tubulated cylinder, with five denticulations at the mouth, and of the length of the limb: the germen is oblong, and situated under the receptacle of the floscule: the style is filiform, erect, and of the length of the stamina, and perforates the cylinder, formed by the antheræ: the stigma is divided into two patent, revolute segments: there is properly no true pericarpium, though in some of the genera there is a kind of crust, of a coriaceous substance.

The seed is single, oblong, often of a quadrangular figure, and usually smallest toward the base, and is either coronated or plane; when coronated, the corona is formed either of a downy matter, or of the cup of the corollula. The down of the seed is formed into several rays, disposed in a circular order, and these are sometimes simple, sometimes radiated at the top, and sometimes ramose. This down sometimes also is sessile, and sometimes it stands on a pedicle: when the corona is formed of the perianthium, it is small, permanent, and usually divided into five short segments or denticulations.

The parts of generation are very variously disposed in these corollulæ in the several genera: Hence there are eight species of them; four of the tubulated, and four of the ligulated, corollulæ.

Of the tubulated ones there are, 1. The hermaphrodite kind, in which the stamina and pistil are both present in the same corollula. 2. The male, in which there are only the stamina, without any style or stigma. 3. The female, in which there is a pistil, but no stamina; and, 4. The neutral, in which there is neither pistil, style, nor stamina.

The ligulated corollulæ have the same variations, under which they are expressed by the same terms.

The composite flower, considered in the general, is called *Flos flosculosus*. This is formed of an arrangement of a great number of the former corollulæ together. It's parts are properly two, the receptacle of the fructifications, and the calyx.

The common receptacle of the fructifications receives a number of sessile flowers: it's disk is sometimes hollow, sometime plane, convex, pyramidal, or globose: it's surface either naked or paleaceous. When naked, it is sometimes covered with slight punctures,

punctures, and sometimes it is covered with erect hairs; when paleaceous, the paleæ are of a fubulated figure, or linear; compressed and erect, and serve to separate the stamens.

The calyx or common cup is a perianthium, containing both the receptacle and the stamens, which is contracted after the time of flowering; but, when the seeds are ripened, is expanded again and thrown back. It is either simple, imbricated, or double: the simple calyx is that which surrounds the stamens only, with one series of leaves; the imbricated kind is that composed of a great number of squamæ, the exterior ones of which are gradually shorter, and in part cover the interior.

The double kind, called also Calyx auctus, is that in which there is a single, long, and equal series of segments, surrounding the stamens; and a second series of segments, or another cup shorter, and surrounding the base of the inner taller cup: this outer calyx or series of segments is usually very small.

The compound or composite flowers are of several species. They are composed, 1. Of tubular hermaphrodite stamens in the disk, and the same in the radius. 2. Of tubular hermaphrodite stamens in the disk, and of tubular, female ones in the radius. 3. Of tubular, hermaphrodite stamens in the disk, and tubular, neutral in the radius. 4. Of tubular hermaphrodite ones in the disk, and ligulated hermaphrodite ones in the radius. 5. Of tubular hermaphrodite ones in the disk, and female ligulated ones in the radius. 6. Of tubular hermaphrodite ones in the disk, and of neutral ligulated ones in the radius. 7. Of tubular hermaphrodite ones in the disk, and of naked female ones in the radius. 8. Of tubular male flowers in the disk, and of naked female ones in the radius. 9. Of ligulated hermaphrodite ones in the disk, and of the same in the radius.

According to these distinctions, the class of the Polygamia may be divided into five orders, under the names of, 1. Polygamia Æqualis. 2. Polygamia Superflua. 3. Polygamia Frustranea. 4. Polygamia Necessaria. 5. Polygamia Monogamia.

The essential character of the Flores staminalis consists in the coalescence of the anthers into a cylindric body, and in the seed being single, and placed under the receptacle. The common calyx is wanting in some of the genera, as in the Echinops; and the common receptacle is wanting in some, as in the Mollia. Therefore these are not the parts on which to form a classical character.

Class the Nineteenth. Order the First.

SYNGENESIA POLYGAMIA ÆQUALIS.

Plants whose anthers coalesce into a cylinder, and whose flowers are composed of a number of stamens, each of which has its stamina and pistil in itself.

This order contains what are called the Herbæ flore staminali by others.

IN some of the genera, the corollæ are planipetalous; in others, they are tubipetalous. As they are numerous in the whole, they may be conveniently arranged thus into two divisions.

Class the Nineteenth. Order the First.

Division the First.

Syngenesia Polygamia Æqualis, with the corollæ planipetalous.

TRAGOPOGON.

THE receptacle is naked: the calyx is simple, and formed of many leaves; the down is plumose.

Tragopogon

Tragopogon calycibus corolla longioribus, foliis acuminatis, pedunculis incrassatis.

The Tragopogon, with cups longer than the flowers, and incrassated peduncles.

**Purple Goat's beard,
or Artifi.**

The root is oblong, white, as thick as one's finger, and esculent: the plant rises to two feet high; the stalks are round, hollow, and ramose: the leaves are long, narrow, and sharp-pointed, and much resemble those of the common leek: the flowers are large, and of a deep purple; they stand on the tops of the branches: the cups are much longer than the flowers, and of a bright green.

It is a native of Germany; we have it frequent in our gardens. Authors call it, *Tragopogon purpureum*, and *Artifi*.

The other species are, 1. The common, yellow *Tragopogon*. 2. The oblong, sinuated-leaved *Tragopogon*. 3. The broad-leaved, blue *Tragopogon*. 4. The grassy-leaved, scarlet *Tragopogon*. 5. The crocus-leaved, purple *Tragopogon*. 6. The yellowish-flowered, laciniated-leaved *Tragopogon*. 7. The low, hairy *Tragopogon*. 8. The succory-leaved, hoary *Tragopogon*, called by authors, *Hierachium magnum*, and *Chondrilla foliis cichorei*.

PRENANTHES.

THE receptacle is naked; the calyx is calyculated: the down is simple, and nearly sessile: the floscules are placed in a simple series.

The characters sufficiently distinguish the *Prenanthes*, without a farther description.

CHONDRILLA.

THE receptacle is naked; the calyx is calyculated; the down is simple and stipated: the floscules are arranged in several series.

Chondrilla caule spinoso, ramis junceis.

The prickly, rushy-branched Chondrilla.

**Rushy Gum
Succory.**

The root is large, oblong, white, and full of a viscous juice: the radical leaves are large, broad, and jagged at the edges: the stalks are tough, rushy toward the top, and prickly in the lower part: the plant rises to four feet high; the leaves are jagged, and very few; the flowers are yellow, moderately large, and grow from the sides of the stalks toward the tops.

It is common in France and Italy. C. Bauhine calls it, *Chondrilla juncea viscosa arvensis* quæ prima Dioscoridis.

The other species are, 1. The hawkweed-leaved *Chondrilla*, called *Hierachium pulchrum* by many. 2. The pale-flowered, sonchus-leaved *Chondrilla*. 3. The purple-flowered, sonchus-leaved *Chondrilla*. 4. The narrower-leaved, purple *Chondrilla*.

CREPIS.

THE receptacle is naked; the calyx is calyculated; the down is plumose and stipated.

Crepis foliis amplexicaulibus lanceolatis dentatis, radicalibus sinuatis.

The creeping, amplexicaule-leaved, dentated Crepis, with the radical leaves sinuated.

The root is oblong and white; the radical leaves are large, hairy, and sinuated; the stalks are numerous, round, of a foot high, and hairy; the leaves on them are dentated, and stand at distances, and from the axis of each there rises a branch: the

the flowers stand at the tops of the branches, and, before they open, they bend downwards; they are, when open, very large, and of a fine bright red.

It is a native of Italy. C. Bauhine calls it, *Chondrilla purpurascens foetida*; others, *Hierachium Apulium flore suaverubente*.

The other species are, 1. The scorzonera-leaved, Alpine Crepis. 2. The Crepis, with oval, dentated leaves. 3. The scitaceous-cupped Crepis, called by others the falcated, proliferous Hawkweed.

HYOSERIS.

THE receptacle is naked; the calyx is calyculated: the down is simple.

This genus comprehends the *Taraxacastrum* of Vaillant, and the *Leontodontoides* of Micheli.

Hyoseris caule diviso nudo.

The Hyoseris, with a divided, naked stalk.

**Swine's
Succory.**

The root is white, slender, and very long; the leaves are numerous, oblong, and rounded at the ends; they somewhat resemble those of the common, little daisy; they are a little hairy, serrated at the edges, and of a bluish-green: the stalks are numerous, slender at the bottom, but thicker toward the parts where the flowers stand; they are naked, except for some little rudiments of leaves at the bases of the ramifications: the flowers are small and yellow.

It is common in sandy places in most parts of Europe. C. Bauhine calls it, *Hierachium minus folio subrotundo*.

LAPSANA.

THE receptacle is naked; the calyx is calyculated, and every squamma usually incloses a seed.

This genus comprehends the *Lampfana*, *Hedypnois*, *Zacyntha*, *Rhagadiolus*, and *Rhagadioloides* of authors. In the *Lampfana*, the seeds are all naked, not furrounded by the squammæ of the cup. In the *Rhagadiolus*, every squamma of the cup incloses a single seed. In the *Zacyntha*, the marginal seeds are each furrounded by a squamma of the cup, and the central ones are coronated with a short, simple down. In the *Hedypnois*, the marginal seeds are each furrounded in a squamma of the cup, and the central ones are coronated with a cup divided into five denticles.

Lapsana calycibus fructus undique radiis subulatis patentibus, foliis indivisis.

The undivided-leaved Lapsana, with the cups patent and radiated.

**Stellated
Hailweed.**

The root is oblong, simple, and white; the plant rises to a foot and a half high; the stalks are round, slender-branched, and a little hairy: the leaves are two or three inches long, of a lanceolated figure, and undivided at the edges: the flowers are small, yellow, and numerous: the cups of the fruit are radiated; there is a single seed immersed in each of the horns or rays.

It is a native of France. C. Bauhine calls it, *Hierachium siliqua falcata*; J. Bauhine, *Hierachium stellatum*; others, *Rhagadiolus*.

The other species are, 1. The common *Lampfana*, or Nipple-wort. 2. The crooked-seeded, drooping-headed *Lampfana*, called *Hedypnois* by Tournefort and others. 3. The wart-succory, or *Lampfana*, called by many *Cichoreum verrucosum*; and by Tournefort, *Zacyntha*.

LACTUCA.

THE receptacle is naked; the calyx is imbricated; the down is simple, and has a stalk.

Lactuca caule et foliis aculeatis. Prickly-ribbed,
The Lactuca, with prickly leaves and stalks. Wild Lettuce.

The root is large, oblong, and white: the radical leaves are ten inches long, and four broad, sinuated, and serrated, and the middle rib underneath is armed with short, sharp spines: the plant rises to five feet high, and is in every part full of a milky juice, of a disagreeable smell: the flowers are small, numerous, and yellow: the leaves on the stalk are like the radical ones, only smaller.

It is common on our-ditch banks. C. Bauhine calls it, *Lactuca fylvestris costa spinosa*.

The other species are, 1. The great, whole-leaved, opium-scented *Lactuca*. 2. The narrow and lacinated-leaved Lettuce. 3. The dwarf, blue-flowered, wild Lettuce. 4. The many-leaved, wild Lettuce. 5. The white-flowered, dwarf, wild Lettuce. 6. The dandelion-leaved, wild Lettuce. 7. The broad-leaved, blue-flowered, wild Lettuce. 8. The tall, broad-leaved, American, wild Lettuce. 9. The purple-flowered, low, sinuated-leaved, wild Lettuce. 10. The roundish-leaved, garden Lettuce. 11. The long-leaved, garden Lettuce. From these two last species culture has raised a vast number of varieties, called also species by many.

HIERACHIUM.

THE receptacle is naked; the calyx is imbricated; the down is pappous, simple, and sessile.

Hieracium caule ramoso, foliis radicalibus ovatis dentatis, caulino minore. French
The ramose Hieracium, with the radical leaves den- Lungwort.
tated, the cauline smaller.

The root is fibrated: the plant rises to two feet high: the radical leaves are oblong, oval, very hairy, and dentated: the stalk is robust, hairy, ramose, and, at it's extremities, is ornamented with large, yellow flowers.

It is common on walls. C. Bauhine calls it, *Hieracium murorum folio pilosissimo*.

The other species are very numerous: there are, 1. The great, narrow-leaved, smooth *Hieracium*. 2. The little, yellow-flowered *Hieracium*. 3. The yellow, hairy *Hieracium*, with large flowers. 4. The dandelion-leaved *Hieracium*. 5. The bulbous, endive-leaved *Hieracium*. 6. The small-flowered, dandelion-leaved *Hieracium*. 7. The little, pale red-flowered *Hieracium*. 8. The rough, succory-leaved *Hieracium*. 9. The smooth, succory-leaved *Hieracium*. 10. The coronopus-leaved *Hieracium*. 11. The hairy, dandelion-leaved, taller *Hieracium*. 12. The broader-leaved *Hieracium*. 13. The *Hieracium*, called *Sonchus lanatus*. 14. The yellow, endive *Hieracium*. 15. The great, flowered, white, endive *Hieracium*. 16. The narrower-leaved, hairy Lungwort. 17. The pilosella-leaved, erect *Hieracium*. 18. The narrow-leaved, umbellated *Hieracium*. 19. The common Pilosella. 20. The purple *Hieracium*. 21. The statice-leaved, naked-stalked *Hieracium*. 22. The statice-leaved, leafy-stalked *Hieracium*. 23. The vesicose *Hieracium*. 24. The broad-leaved, smooth *Hieracium*. 25. The turnep-leaved, rough *Hieracium*. 26. The conyza-leaved *Hieracium*. 27. The great-flowered, hairy, mountain *Hieracium*. 28. The dwarf, succory-leaved *Hieracium*. 29. The broad-leaved, bush *Hieracium*. 30. The narrow-leaved, bush *Hieracium*. 31. The rigid-stalked, erect, narrow-leaved *Hieracium*. 32. The narrow, hoary-leaved *Hieracium*. 33. The doricum-leaved *Hieracium*. 34. The lampfana-leaved *Hieracium*. 35. The blattaria-leaved *Hieracium*. 36. The cernith-leaved *Hieracium*. 37. The round-leaved, amplexicaule *Hieracium*. 38. The narrow, amplexicaule-leaved *Hieracium*. 39. The scorzonera-leaved *Hieracium*.

PICRIS.

THE receptacle is naked; the calyx is imbricated; the down is plumose: the seeds are furrowed cross-wise.

This genus comprehends the *Helminthotheca* of Vaillant.

Picris

*Picris perianthis involucri magno cinctis.**The Picris, with the cup surrounded by a great involucre.***Langue
de Beuf.**

The root is oblong and fibrated: the leaves are three inches long, narrow, sinuated, and very rough to the touch: the plant rises to a foot and a half high: the stalks are ramose, and thick-set with leaves: the flowers are moderately large, and yellow, and are surrounded by an involucre, which gives the whole greatly the appearance of the head of the *carduus benedictus*, but that it is smaller.

It is common by ditch-sides. C. Bauhine calls it, *Hierachium echinoides capitulis cardui benedicti*.

The other species are, 1. The rough, laciniated, Cretic *Picris*, called by most authors a *Sonchus*. 2. The rough *Picris*, with large flowers, common about the edges of corn-fields.

S C O R Z O N E R A.

THE receptacle is naked: the calyx is imbricated; the down is plumose: the squamæ which form the cup have membranaceous edges.

*Scorzonera caule ramoso, foliis amplexicaulibus integris undulatis.**The branched Scorzonera, with undivided, undulated, amplexicaule leaves.***Great U-
per's-grass.**

The root is oblong, white, and large: the plant rises to three feet high: the stalks are round, robust, of a bluish-green colour, and ramose: the leaves are oblong, broad, of a strong green colour, undulated, but not divided at the edges: the flowers are large and yellow; they stand at the extremities of very long branches: the root is esculent.

It is a native of Spain. C. Bauhine calls it, *Scorzonera latifolia sinuata*.

The other species of *Scorzonera* are, 1. The lower, broad-leaved *Scorzonera*. 2. The broad and nervous-leaved, low *Scorzonera*. 3. The tall, narrow-leaved *Scorzonera*. 4. The low, narrow-leaved *Scorzonera*. 5. The blue-flowered, narrow-leaved *Scorzonera*. 6. The thick-leaved *Montpelier Scorzonera*. 7. The dusky-flowered, marsh *Scorzonera*. 8. The jagged-leaved *Scorzonera*. 9. The capillaceous-leaved *Scorzonera*. 10. The plantain-leaved *Scorzonera*. 11. The grassy-leaved, pale yellow-flowered *Scorzonera*.

L E O N T O D O N.

THE receptacle is naked; the calyx is imbricated; the down is plumose, and the squamæ which form the cup are solid, not membranaceous, at the edge.

This genus comprehends the *Dens Leonis* of Tournefort, and *Taraxacoides* of Vaillant.

*Leontodon foliis frequentius incisfis.**The laciniated-leaved Leontodon.***Jagged
Dandelion.**

The root is long, brown, thick, and fibrated: the leaves are numerous, four or five inches long, an inch and a half broad, divided into narrow segments, and those subdivided each into two or three others toward the extremity: the stalks are numerous, slender, hollow, naked, and of a pale green colour; on the summit of each stands a small yellow flower.

It is a native of Germany. C. Bauhine calls it, *Dens Leonis tenuissimo folio*.

The other species are, 1. The common Dandelion. 2. The leafy-stalked, great *Leontodon*. 3. The small, narrow-leaved, reddish-seeded *Leontodon*. 4. The roundish-leaved *Leontodon*. 5. The asphodel-rooted *Leontodon*. 6. The little, rough *Leontodon*. 7. The radiated-leaved *Leontodon*. 8. The bulbous-rooted *Leontodon*. 9. The hoary-leaved *Leontodon*. 10. The long-leaved, rough, naked-stalked *Leontodon*. 11. The less divided-leaved, stone *Leontodon*. 12. The little, dry-leaved, hairy *Leontodon*.

ontodon. 13. The small-flowered, downy Leontodon. 14. The pilosella-leaved, mountain Leontodon. 15. The dwarf, smooth Leontodon. 16. The dwarf, rough Leontodon. 17. The great-leaved Leontodon.

SONCHUS.

THE receptacle is naked; the cup is imbricated; the down is plumose, and the calyx ventricose.

Sonchus caule erecto, foliis pinnato-basistatis, floribus congestis villosis.

The erect, basistated-leaved Sonchus, with clustered, hairy flowers.

Great, marsh
Sow-thistle.

The root is long, creeping, perennial, and full of a milky juice: the plant rises to ten feet high: the leaves are eight inches long, divided at the edges like those of dandelion, and basistated at the extremity: the flowers stand at the tops of the branches; they are large, numerous, of a deep yellow colour, and hairy.

It is common in our salt marshes, and elsewhere. C. Bauhine calls it, *Hierachium majus folio Sonchi*.

The other species are, 1. The undivided-leaved, prickly Sonchus. 2. The dandelion-leaved, prickly Sonchus. 3. The dipicus-leaved, prickly Sonchus. 4. The Cretic, prickly Sonchus. 5. The rough, broad-leaved Sonchus. 6. The broad-leaved, smooth Sonchus. 7. The fine divided-leaved, smooth Sonchus. 8. The lightly sinuated-leaved, smooth Sonchus. 9. The narrow-leaved, smooth Sonchus. 10. The narrow-leaved, sea Sonchus. 11. The poppy-leaved Sonchus.

HYPOCHÆRIS.

THE receptacle is paleaceous; the calyx is imbricated; the down is plumose. This genus comprehends the *Achyrophorus* of Vaillant.

Hypochæris calycibus æqualibus bifidis.

The rough, equal-cupped Hypochæris.

The root is oblong, slender, and white: the plant grows to seven inches high: the stalk is round, green, and slender: the leaves are of an obversely oval figure, the narrower extremity terminating in a pedicle: the flowers stand singly on the tops of the branches; they are moderately large and yellow: the whole plant has a number of long, white, loose hairs at distances upon it.

It is a native of Crete. Ray calls it, *Hierachium ramosum foliis oblongis, obtusis, &c.* Vaillant, *Achyrophorus fere glaber, bellidis glauco dentatoque folio*.

The other species are, 1. The smooth, dandelion-leaved Hypochæris. 2. The broader-leaved, large-flowered Hypochæris.

CATANANCE.

THE receptacle is paleaceous; the cup is imbricated; the down arises from a little calyx, terminated by five setæ, or hairs.

Catanance squammis calycinis inferioribus lanceolatis.

The Catanance, with the lower leaves of the cup lanceolated.

The root is fibrous: the radical leaves are broad and nervous: the stalk is round, ramose, and smooth; the leaves on it are deeply sinuated at the edges: the flowers stand at the extremities of the branches; they are large and yellow, and in shape much resemble those of the cyanus, or blue-bottle.

It is a native of Crete. Boccone calls it, *Chondrilla cyanoides lutea coronopi folio*.

The other species are, 1. The blue Catanance, with sinuated leaves. 2. The willow-leaved Catanance. 3. The broad, undivided-leaved Catanance.

SCOLYMUS.

THE receptacle is paleaceous; the calyx is imbricated; there is no down to the seed.

Scolymus annuus.

The annual Scolymus.

The root is esculent, large, oblong, and of a yellowish-brown colour, and full of a milky juice: the plant rises to four feet high: the leaves are oblong, sinuated, prickly, and often blotched with white; the stalk also is very prickly: the flowers are large, and of a beautiful yellow colour; they stand in the axils of the leaves.

It is a native of France. Vaillant calls it, *Scolymus chrysanthemus annuus*.

The other species are, 1. The lower, perennial-rooted Scolymus. 2. The tall, African Scolymus.

CICHOREUM.

THE receptacle is paleaceous; the calyx is calyculated; the margin of the down is quinque-dentated.

Cichoreum caule simplici, foliis dentato-sinuatis.

The simple-stalked Cichoreum, with dentato-sinuated leaves.

Wild

Succory.

The root is oblong, thick, and full of a milky juice: the stalks are numerous, two or three feet high, and ramose: the leaves are three inches long, and a little more than an inch broad, variously sinuated at the edges: the flowers are large, and of a beautiful blue colour; they grow without pedicles, from the sides of the stalks.

It is common by way-sides. C. Bauhine calls it, *Cichoreum sylvestre*, five officinarum.

The other species are, 1. The common, blue-flowered, broad-leaved, garden Cichoreum. 2. The garden Cichoreum, called Endive. 3. The narrow-leaved Endive. 4. The prickly, Cretic Endive. 5. The large and deeply divided-leaved Cichoreum.

ANDRYALA.

THE receptacle is hairy; the calyx is divided into many parts; the down is simple and sessile.

This genus comprehends the *Eriophorus* of Vaillant.

Andryala foliis integris.

The undivided-leaved Andryala.

Woolly

Hardweed.

The root is large, oblong, and fibrated; the plant rises to two feet in height: the stalk is robust, thick, hairy, and ramose: the leaves are two inches and a half long, very narrow, like those of the cyanus, and covered with a white, downy matter: the flowers stand on the extremities of the branches; they are of a bright yellow colour, but not large.

It is a native of Sicily. C. Bauhine calls it, *Sonchus lanatus luteus major*.

ELEPHANTOPUS.

THE receptacle is naked; the corollulæ stand in a simple series, and are divided into five segments.

Elephantopus foliis ovatis serratis.
The oval, serrated-leaved Elephantopus.

Balfard
Scabions.

The root is long and thick: the plant rises to four feet high: the stalk is thick, round, striated, and hairy: the leaves are five inches long, and two broad, largest in the middle, and terminate in a point; they are dentated at the edges, hairy on the upper surface, and corrugated underneath: the flowers are large, round, and white.

It is a native of Jamaica. Ray calls it, *Scabiosa affinis anomala enulæ folio*.

Class the Nineteenth. Order the First.

Division the Second.

Syngenesia Polygamia Æqualis, the corollæ tubipetalous.

E C H I N O P S.

THE proper calyx, containing a single flower, is imbricated and erect; many of these simple ones are often contained in one common, or general, cup.
 This genus comprehends the Echinopus of Tournefort.

Echinops floribus capitatis, calycibus unifloris.
The capitated-flowered Echinops, with uniflorous cups.

The Globe-
thistle.

The root is oblong, thick, and blackish: the plant grows to two feet high: the stalk is thick, striated, and covered with purple hairs: the leaves are long, narrow, sinuated at the edges, and hairy: the flowers stand on the extremities of the branches, in large, round heads; they are small and blue.

It is a native of Italy. C. Bauhine calls it, *Echinopus major*; others, *Carduus globosus*.

The other species are, 1. The lesser, blue-flowered Echinops. 2. The little, annual Echinops, with very large heads. 3. The ilex-leaved, shrubby, American Echinops, flowering at the ale.

G U N D E L I A.

THE common receptacle is divided, every division having five flowers: the paleæ are divided at their extremity into three points.

It is an oriental, and is sufficiently distinguished by these characters, without a farther description.

A R C T I U M.

THE calyx is globose; the squammæ of it are terminated by hooked filaments.
 This genus comprehends the Lappa of Tournefort and others.

There is but one known species of it.

A R C T I U M.

The Bur-dock.

The root is very long, and an inch in diameter: the leaves stand on long pedicles, and are often a foot and a half long, a foot wide near the base, and of a greyish-green colour: the stalk rises to five feet high; it is firm, tough, striated, and ramose: the flowers are small and whitish; the heads roundish, and adhering to every thing that touches them.

It is common by way-sides. C. Bauhine calls it, *Arctium, five Lappa major*. The heads vary greatly in size, and are sometimes more, sometimes less, rough: from these, and other variations, owing wholly to accident, authors have raised several imaginary new species of this plant, though nature made but one.

SERRATULA.

SERRATULA.

THE calyx is of a nearly cylindric figure, beautifully imbricated, and smooth.

Serratula foliis pinnatifidis, lacinia terminatrice maxima. Saw-
The pinnatifid-leaved Serratula, with the extreme segment largest. Wort.

The root is oblong, firm, tough, and fibrated: the plant rises to two feet, or more, in height: the stalk is slender, striated, and ramose: the leaves are very irregularly pinnated; the terminating lobe is always the largest, sometimes it is almost the whole leaf, the lateral pinnæ scarce at all appearing; and sometimes it appears alone in form of a simple, oval leaf: the flowers are naturally red, often white.

It is a native of our woods and thickets. C. Bauhine calls it, *Serratula vulgaris*. Authors have divided it into several species, from the variations in the serratures and pinnaures of the leaves, and the colour of the flowers.

The other species are, 1. The oblong, lanceolated-leaved Serratula, called the *Jacea perfoliata*. 2. The dentated, spinose Serratula, called the hamorrhoidal Thistle. 3. The great, woolly-headed, Russian Serratula.

ONOPORDON.

THE receptacle is naked; the squammæ of the cup are mucroated.

Onopordon foliis decurrentibus margine spinosis. Cotton
The Onopordon, with decurrent, spinose leaves. Thistle.

The root is long, white, and tough: the leaves are very large, oblong, sinuated, and serrated at the edges, the serratures terminating in spines; they are of a white colour, and cottony appearance; the radical ones are often a foot and a half long: the stalk is round, striated, firm, white, and four or five feet high: the leaves are alternate, and like the radical ones, and run down the stalk at their base, forming ridges: the heads are large; the flowers of a beautiful purple colour.

The plant is common with us by way-sides. C. Bauhine calls it, *Spina alba tomentosa latifolia vulgaris*; others, *Acanthium vulgare*.

The other species are, 1. The tall, Portugal Onopordon. 2. The narrow-leaved Onopordon. 3. The great-flowered Onopordon. 4. The many-flowered Onopordon. 5. The longer-leaved Onopordon. 6. The more spinose Onopordon.

CARDUS.

THE calyx is of an ovated figure, and imbricated with spinose squammæ.

Carduus squammis calycinis margine et apice spinosis. Ladies
The Carduus, with the squammæ of the cup spinose at the Thistle.
sides and ends.

This is one of the most beautiful of the English plants, and wants only to have been a native of a distant part of the world to have given it a place in our gardens: the root is long, thick, and white: the radical leaves are two feet long, and more than a foot broad, elegantly sinuated, and serrated at the edges, the serratures prickly, and the whole leaf of a fine bright and strong green colour, beautifully variegated with irregular veins of a milk-white: the stalk is round, striated, an inch in diameter, and five or six feet high: the leaves are like the radical ones: the flowers at the tops of the branches are very numerous and very large; the cups elegantly squammoso and prickly, the corollæ purple.

It is common by way-sides. C. Bauhine calls it, *Carduus albis maculis notatus vulgaris*; others, *Carduus Maris*.

The other species are, 1. The spear Thistle, or lanceolated pointed-leaved Carduus. 2. The woolly and round-headed Carduus. 3. The Carduus, with a beeding head. 4. The decurrent-

decurent-leaved, very prickly Carduus. 5. The cluster-headed Carduus. 6. The Carduus, called the great Cirsium, or gentle thistle. 7. The common, many-headed, meadow Carduus. 8. The stellate-headed Carduus. 9. The broad, laciniated-leaved Carduus. 10. The yellow, narrow-leaved Carduus. 11. The purple, stellate Carduus, with undivided leaves. 12. The little-headed Carduus. 13. The yellow, broader-leaved Carduus. 14. The eryngium-leaved Carduus. 15. The yellowish, red, hoary Carduus. 16. The round-headed, divided-leaved Carduus. 17. The succory-leaved Carduus. 18. The rocket-leaved Carduus. 19. The conglobate-headed Carduus. 20. The coronopus-leaved Carduus. 21. The turnep-leaved Carduus. 22. The asphodel-rooted, soft Carduus. 23. The laciniated-leaved Cirsium. 24. The Cirsium, with a large head, and large squammæ. 25. The hairy, compact-flowered Carduus. 26. The narrow, undivided-leaved Carduus. 27. The finely divided-leaved Cirsium. 28. The fonchus-leaved Cirsium. 29. The dock-leaved Cirsium. 30. The ferratula-leaved Cirsium. 31. The dwarf Cirsium. 32. The burdock-leaved Cirsium.

C Y N A R A.

THE calyx is dilated, imbricated, and formed of squammæ of a fleshy structure, emarginated and pointed.

This genus comprehends the Cynara and Scolymus of authors.

Cynara foliis pinnatis, laciniis ferratis.

The Cynara, with pinnated and ferrated leaves.

**The Artichoke
and Chardon.**

The root is oblong and fibrated; the leaves are a foot and half long, eight inches broad, and of a pale greyish-green; they are deeply laciniated or pinnatifid, and the segments or pinnæ ferrated at the edges: the stalk rises to two feet high; it is thick, tough, striated, and hoary: the heads stand on the extremity of the branches; they are very large, and the corollæ purple.

This plant varies in the having its leaves prickly, and divided into narrower segments. It is in this state that our gardeners blanch its stalks for the table, under the name of *Chardon*; and some have esteemed these two different species, but experiment shews, that they will both rise from the seeds of the same head.

The other species are, 1. The broad-leaved, wild Cynara. 2. The very prickly, blue-flowered, smaller-headed Cynara. 3. The smaller Cynara of Candy.

C A R L I N A.

THE calyx is broad; the marginal squammæ are long, coloured, and resemble the radius of a flower.

Carlina caule uniflora.

The Carlina, with a single flower.

**Carlina
Thistle.**

The root is large, thick, and creeping; the leaves are numerous; they lie on the ground in a radiated manner, and are six inches long, an inch and a half broad, deeply divided, and as it were curled at the edges, and very prickly: the flowers are purple; the heads are large and very prickly, but they have no visible pedicle. Though this species have no stalk in its common state, the head growing sessile in the center of the leaves; if planted close in pots, it will rise to a foot high.

It is found on our heaths. C. Bauhine calls it, *Carlina acaulis magno flore*. It's root was once kept in the shops, as an alexipharmic and astringent, but it is now cut of use.

The other species are, 1. The taller, many-flowered, wild Carlina. 2. The great, gummy Carlina. 3. The tall, deeply, ferrated-leaved Carlina. 4. The tall, many-headed Carlina. 5. The yellow-flowered, perennial Carlina. 6. The little, yellow, patulous-flowered Carlina. 7. The shorter-leaved, patulous-flowered Carlina. 8. The umbellated, Italian Carlina. 9. The great, purple, patulous-flowered Carlina.

C A R-

CARTHAMUS.

THE calyx is of an oval figure, and imbricated; the squammæ are of an oval figure, and foliaceous at the extremity.

Carthamus foliis ovatis integris serrato-aculeatis.

Bastard

The Carthamus, with undivided, oval, serrato-aculeate leaves. **Saffron.**

The root is oblong and white; the plant rises to two feet high; the stalk is slender and round; the leaves are two inches long, more than an inch broad, obtuse at the end, serrated, and prickly round the edges: the heads are large, and surrounded with leaves: the flowers are of a reddish yellow or saffron colour: the seeds are large, long, and white.

It is a native of Egypt. C. Bauhine calls it, *Cnicus vulgaris*, five *Carthamus officinarum*. Its seeds were once in use as a cathartic, but are now neglected.

The other species are, 1. The woolly-stalked, dentated-leaved *Carthamus*, the yellow *Atractylis* of authors. 2. The lesser, blue *Carthamus*. 3. The great, blue, prickly *Carthamus*. 4. The dwarf, purple *Carthamus*. 5. The long, serrated-leaved *Carthamus*. 6. The broad, shorter-leaved *Carthamus*.

CNICUS.

THE calyx is of an oval figure and imbricated: the squammæ are ramose and prickly, and equal the corollæ in length.

This genus comprehends the *Acarna* of Vaillant.

Cnicus caule diffuso foliis dentato-sinuatis.

The diffuse-stalked Cnicus, with dentated and sinuated leaves.

**Carduus
Benedictus.**

The root is oblong, white, and slender: the plant grows to two feet high: the stalks are striated, slender, ramose, and diffuse: the leaves are numerous, four inches long, an inch and a half broad, sinuated, and dentated at the edges, and they surround the stalk at their base; the heads are large, prickly, and surrounded with leaves: the flowers are yellow: the stalks of the plant are often yellowish or reddish; the leaves of a strong green.

It is a native of the East, but thrives very well in our gardens. C. Bauhine calls it, *Cnicus sylvestris hirsutus*, five *Carduus Benedictus*. An infusion of the leaves of this plant is given to work off emetics; it is also esteemed a cardiac and alexipharmic, but is not used as such with us.

The other species are, 1. The cordated-leaved, Siberian *Cnicus*. 2. The yellow, or purple-flowered, acanthus-leaved *Cnicus*. 3. The blue, prickly *Cnicus*. 4. The *Cnicus*, with leaves variegated with white. 5. The dwarf, purple, prickly *Cnicus*. 6. The many-headed *Cnicus*.

ATRACYLIS.

THE corollulæ are radiated, and those of the radius are divided into five short segments at the mouth.

The characters sufficiently distinguish the *Atractylis* from all the other genera, without a further description.

STÆBE.

THE receptacle is paleaceous; the down is plumose: there is a peculiar cup formed of five leaves, surrounding each flower below the germen.

These characters sufficiently also distinguish the *Stæbe*, without a further description.

STÆHELINA.

THE receptacle is paleaceous; the down is plumose: the calyx is oblong and imbricated; the squammæ are membranaceous and reflex at their extremities. These characters sufficiently distinguish the Stæhelina, without a farther description.

BIDENS.

THE receptacle is paleaceous; and the seeds are armed with erect, scabrous, or prickly aristæ.

This genus comprehends the Bidens of Tournefort, and the Ceratocephalus of Vailant.

Bidens corona seminum retrorsum aculeata, foliis trifidis.

The trifid-leaved Bidens, with the corona of the seeds prickly downwards.

**Water Hemp
Agrimony.**

The root is composed of a multitude of large fibres: the plant rises to three feet high: the stalk is round, ramose, and usually reddish; the leaves are three or four inches long, and are usually divided into three parts, sometimes into five, and sometimes not divided at all; they are smooth, deeply serrated at the edges, and have broad pedicles, with which they embrace the stalk: the flowers are numerous and yellow; their cups purplish: the seed is oblong and broad, and has three prickles at it's top, which are bearded with lesser prickles pointed downwards.

It is common in wet places. C. Bauhine calls it, *Cannabina aquatica folio tripartito diviso*. The seeds of this species are figured and described in the Philosophical Transactions, under the name of strange Aquatic Animals.

The other species are, 1. The undivided-leaved Bidens. 2. The broad-leaved, yellow, American Bidens. 3. The smallage-leaved, American Bidens. 4. The stalked Bidens. 5. The daisy-flowered Bidens. 6. The American Bidens, with round, bullated leaves. 7. The shrubby, ilex-leaved Bidens. 8. The sphondylium-leaved Bidens. 9. The trifoliate, radiated, flowered Bidens. 10. The smaller-flowered Bidens.

SANTOLINA.

THE receptacle is paleaceous; the down is very short: the calyx is of a hemispheric figure, and imbricated.

Santolina foliis quadrifariam dentatis, pedunculis unifloris.

The quadrifariously dentated-leaved Santolina, with single flowers on the peduncles.

**Lavender
Cotton.**

The root is long, large, and brachiated, woody and brown: the plant grows to two feet high; the stem and branches are tough and woody: the leaves are an inch long, slender, and dentated four ways at once; they are of a whitish colour, as are also the young shoots, and of a strong smell: the flowers are small and yellow, and stand singly on the pedicles.

It is a native of France and Spain; it is common in our gardens. C. Bauhine calls it, *Abrotanum fœmina foliis teretibus*.

The other species are, 1. The trifid-leaved, African Santolina, called shrubby *Coma aurea*. 2. The hairy Santolina, with larger flowers. 3. The favin-leaved Santolina. 4. The cypress-leaved Santolina. 5. The hoary, creeping Santolina. 6. The green-leaved, pale, yellow Santolina. 7. The great, rosemary-leaved Santolina. 8. The large, coronopus-leaved Santolina. 9. The chamomile-leaved, Spanish Santolina.

TARCHO-

TARCHONANTHUS.

THE receptacle is hairy; the down is plumose; the calyx is formed of a single leaf, lightly divided into seven segments at the extremity.

These characters sufficiently distinguish the Tarchonanthus, without a farther description.

TANACETUM.

THE receptacle is naked; there is no down to the seeds: the calyx is imbricated and hemispheric.

This genus comprehends the Tanacetum and the Balsamita of authors.

Tanacetum foliis ovatis integris serratis.

The Tanacetum, with oval, undivided, serrated leaves. **Costmary.**

The root is oblique and creeping; the plant rises to two or three feet high; the stalks are round, striated, and of a greyish-green: the leaves are two inches long, an inch and a half broad, of a greyish-green, and serrated about the edges; the flowers stand in a kind of umbels at the extremities of the branches; they are small and yellow.

It is a native of Tuscany. C. Bauhine calls it, *Mentha hortensis corymbifera*, others, *Balsamita mas*.

The other species are, 1. The common Tanzy. 2. The finer-leaved Tanacetum.

AGERATUM.

THE receptacle is naked; the down has five aristæ: the calyx is oblong and sub-equal.

Of this genus there is but one known species. The Agerata of authors are Achilleæ.

AGERATUM.

The root is fibrous: the plant grows to a foot high; the stalks are round and firm; the leaves are two inches long, broadest at the base, and serrated round the edges: the flowers stand on the extremities of the branches, and are white.

It is a native of America. Tournefort calls it, *Conyza lamii folio, flore albo*.

CHRYSOCOMA.

THE receptacle is naked; the down is simple; the calyx is hemispheric and imbricated.

This genus comprehends the Coma aurea of Boerhaave.

Chrysocoma foliis oblongis angustis, floribus congestis.

The cluster-flowered Chrysocoma, with oblong, narrow leaves.

The root is fibrous; the plant rises to two or three feet high: the stalk is round, firm, and erect; the leaves are numerous, oblong, narrow, and of a pale green: the flowers stand on the summits of the main stalk and branches, in form of large umbels; they are small, and of a fine bright yellow.

It is a native of Germany. J. Bauhine calls it, *Linaria aurea Trogi*, five *Linaria tertia*; others, *Coma aurea Germanica*.

The other species are, 1. The shrubby, African, narrow-leaved Chrysocoma. 2. The samphire-leaved Chrysocoma. 3. The trifid-leaved, shrubby, African Chrysocoma. 4. The multifid-leaved, African Chrysocoma. 5. The very narrow, long, and trifid-leaved, shrubby, African Chrysocoma. 6. The succulent, digitated-leaved, shrubby Chrysocoma. 7. The larger-leaved, sweet-scented, African Chrysocoma.

KLEINIA.

KLEINIA.

THE receptacle is naked; the down is simple; the calyx is calyculate and cylindrical.

Kleinia caule herbaceo, foliis hastato-sagittatis, petiolis superne dilatatis.
The Kleinia, with an herbaceous stalk, and hastato-sagittated leaves, their pedicles dilated upwards.

The root is fibrated and perennial; the plant rises to six feet high: the stalk is striated, erect, and not ramose: the leaves are broadest at the base, and terminate in a point; they are of a sagittated figure, and dentated round the edges; the pedicles are dilated at the upper part: the flowers are moderately large and white; they stand in clusters like umbels at the extremities of the stalk and branches.

It is a native of Virginia. Gronovius calls it, *Porophyllum foliis deltoidibus angulatis*.

The other species are, 1. The shorter-leaved Kleinia. 2. The smaller-flowered Kleinia.

EUPATORIUM.

THE receptacle is naked; the down is plumose; the calyx is oblong and imbricated; the style is semibifid.

Eupatorium foliis digitatis.

The digitated-leaved Eupatorium.

Common Hemp
 Agrimony.

The root is oblique, creeping, and fibrated: the plant rises to four or five feet high; the stalk is round, erect, woolly, and of a purplish green; the leaves are placed three on a pedicle usually, and are oblong, dentated, and rough, and of a pale green: the flowers are small, and of a pale red; they stand in very large clusters at the tops of the stalk and branches.

It is common by waters. C. Bauhine calls it, *Eupatorium cannabinum*.

The other species are, 1. The nettle-leaved Eupatorium. 2. The white-flowered, betony-leaved Eupatorium. 3. The sage-leaved, perfoliate Eupatorium. 4. The mullein-leaved Eupatorium. 5. The woolly, nettle-leaved Eupatorium. 6. The atriplex-leaved shrubby Eupatorium. 7. The purple-flowered, Sophia-leaved Eupatorium. 8. The ground-ivy-leaved Eupatorium. 9. The petasitis-leaved Eupatorium. 10. The long, rugose-leaved, purple-stalked Eupatorium.

Class the Nineteenth. Order the Second.

SYNGENESIA POLYGAMIA SUPERFLUA.

Plants in which the flowers of the disk are hermaphrodites, and have stigmata, and produce seeds; and those of the radius are females, and produce seeds also.

THE plants called *Herbæ flore scissuloso*, and *Flore radiato* of Tournefort, are of this order of the Syngenesia; the genera may therefore be properly arranged, according to that obvious distinction, into two divisions.

Class

Class the Nineteenth. Order the Second.

Division the First.

Syngenesia Polygamia Superflua, with flosculous flowers.

ARTEMISIA.

THE receptacle is somewhat hairy; there is no down to the seeds: the calyx is imbricated, and it's squamæ are rounded and connivent.

This genus comprehends the Abrotanum and Ablynthium of authors.

Artemisia foliis pinnatifidis planis laciniatis, floribus erectis.

The Artemisia, with pinnatifid, plane, lacinated leaves, Common Bugwort.
and erect flowers.

The root is long, thick, and fibrated: the plant grows to four feet high; the stalk is round, striated, and often purplish: the leaves are divided into a multitude of oblong and narrow segments, and are of a dark, blackish-green on the upper side, and hoary underneath: the flowers grow in long clusters about the tops of the stalks and branches, and are small, and whitish, or purplish.

It is common by way-fides. C. Bauhine calls it, *Artemisia vulgaris major caule et flore purpurascens*. It has been esteemed a deobstruent and uterine, but is not used much at present.

The other species are, 1. The lanceolato-linear-leaved *Artemisia*, called *Dracunculus* and *Tarragon*. 2. The erect *Artemisia*, with ramose, setaceous leaves, called *Abrotanum Mas*, or common *Southernwood*. 3. The five-leaved, hoary *Artemisia*, called *Pontic Wormwood*. 4. The tanzy-leaved, strong-scented *Artemisia*. 5. The narrower-leaved *Abrotanum*. 6. The great, hoary *Abrotanum*. 7. The little, narrow-leaved *Abrotanum*. 8. The fine-leaved, mugwort, or field *Abrotanum*. 9. The yellow-flowered, dwarf *Abrotanum*. 10. The thick, rigid, shining-leaved, sea *Abrotanum*. 11. The hoary, soft *Abrotanum*. 12. The spiked *Abrotanum*. 13. The common, large *Wormwood*. 14. The broad-leaved, shrubby *Wormwood*. 15. The narrow-leaved, hoary *Wormwood*. 16. The *Wormwood*, with leaves hoary underneath. 17. The very, fine-leaved *Wormwood*. 18. The lavender-leaved *Wormwood*. 19. The common, sea *Wormwood*. 20. The broader-leaved, sea *Wormwood*. 21. The long-leaved *Wormwood*. 22. The hoary, mountain *Wormwood*. 23. The dwarf, mountain *Wormwood*. 24. The *Abrotanum*-leaved, corymbiferous *Wormwood*. 25. The long-flowered, Spanish *Wormwood*. 26. The round-flowered, Spanish *Wormwood*. 27. The hoary, arborecent, vermiculated-leaved, African *Wormwood*. The *Wormwoods* are all stomachics, and are used in tinctures and infusions.

GNAPHALIUM.

THIERE is no receptacle; the down is plumose: the calyx is imbricated, and the marginal squamæ are roundish and membranaceous.

This genus comprehends the *Gnaphalium*, *Elychrysum*, and *Filago* of authors.

Gnaphalium floribus sparsis per caulem simplicissimum.

The simple-stalked Gnaphalium, with scattered flowers. **English Endweed.**

The root is composed of a few hard, blackish fibres: the stalk is round, white, slender, erect, and a foot, or more, in height; it has no branches: the leaves are an inch and half long, of the breadth of a straw, white, hoary, and soft to the touch: the flowers stand in the axæ of the leaves, all up the stalk, in roundish heads of a dusky colour.

It is common in our woods. C. Bauhine calls it, *Gnaphalium majus angusto oblongo folio alterum*; others, *Gnaphalium Anglicum*.

The other species are, 1. The long-leaved, black-headed Gnaphalium. 2. The round-flowered, mountain Gnaphalium, called Cat's-foot. 3. The common Gnaphalium, called Herba impii. 4. The great, long-leaved Gnaphalium. 5. The little, short-leaved Gnaphalium. 6. The large-flowered, Alpine Gnaphalium. 7. The oblong, foliose-headed, mountain Gnaphalium. 8. The foliose-beaded, sea Gnaphalium. 9. The very, fine-leaved, small-headed, erect Gnaphalium. 10. The woolly, sea Gnaphalium.

Of those called Elychrysa there are, 1. The narrow-leaved Elychrysum, or Stachas citrina. 2. The five-leaved Elychrysum. 3. The narrow and few-leaved Elychrysum. 4. The umbellated, sea Elychrysum. 5. The rough, trifid-leaved Elychrysum. 6. The single-flowered, green-leaved Elychrysum. 7. The broad-leaved, small, single-flowered Elychrysum. 8. The broad-leaved Elychrysum, with a larger, single flower. 9. The broad-leaved, wild Elychrysum, with conglobate heads. 10. The ramose, broad-leaved Elychrysum. 11. The elegant, oriental Elychrysum. 12. The reddish-yellow-cupped Elychrysum. 13. The narrow-leaved Elychrysum, with conglobate heads. 14. The broad-leaved, American Elychrysum. 15. The campion-leaved Elychrysum. 16. The ilex-leaved, shrubby Elychrysum. 17. The great, silvery-cupped, African Elychrysum. 18. The very narrow-leaved Elychrysum, with great, silvery cups. 19. The coris-leaved, shrub Elychrysum. 20. The roundish-leaved, woolly Elychrysum. 21. The yellow, umbellated Elychrysum. 22. The polium-leaved Elychrysum. 23. The narrow-leaved, red-flowered Elychrysum. 24. The rosemary-leaved Elychrysum. 25. The plantain-leaved Elychrysum. 26. The large-leaved, stinking Elychrysum. 27. The broad-leaved, dwarf Elychrysum. 28. The low, capillaceous-leaved Elychrysum.

XERANTHEMUM.

THE receptacle is setaceous; the down has five setæ: the calyx is imbricated and longo-radiate.

This genus comprehends the *Xeranthemum* and *Xeranthemoides* of authors.

Xeranthemum receptaculis paleaceis, foliis oblongis.

Austrian

The long-leaved Xeranthemum, with paleaceous receptacles. SNEEZEWOXT.

The root is annual, oblong, blackish, woody, and fibred: the plant rises to a foot and half high; the stalk is slender and whitish; the leaves are oblong, narrow, soft, whitish, and hoary: the flowers stand at the extremities of the branches, and are large and elegant; they are dry and glossy, the cup is squaminate, and of a silvery white; the flower whitish, with a cast of a purplish blue.

It is a native of Germany and France. C. Bauhine calls it, *Jacca oleæ folio, capitulis simplicibus*; Clusius, *Parmica Austriaca*. The flowers retain their beauty many years.

The other species are, 1. The hoary, white-flowered *Xeranthemum*. 2. The small, purple-flowered *Xeranthemum*.

CARPESIMUM.

THE receptacle is naked; there is no down to the seeds: the calyx is imbricated, and the exterior squammæ of it are reflex.

Of this genus there is but one known species.

CARPESIMUM.

The root is composed of a multitude of large fibres: the leaves are four or five inches long, three inches broad, serrated, obtusely pointed, and hairy: the stalk is erect and branched; toward the top it grows thick, and the flowers from the bending of this part droop downwards: the flowers are moderately large and yellowish.

It is a native of Italy. Ray calls it, *Aster cernuus*; C. Bauhine, *Aster Atticus foliis circa florem mollioribus*.

BACCHARIS.

BACCHARIS.

THE receptacle is naked; the down is simple; the calyx is imbricated and cylindric. These characters sufficiently distinguish the Baccharis: the plant commonly known by this name, however, is not of this genus, but is properly a conyza.

CONYZA.

THE receptacle is naked; the down is simple; the cup is imbricated and roundish.

Conyza foliis lanceolatis acutis, caule annuo corymboso. **Plowman's**
The lanceolate, acute-leaved Conyza, with corymbose stalks. **Spikenard.**

The root is oblong, thick, tough, and biennial: the plant rises to two feet high: the stalks are round, robust, and somewhat hairy: the leaves are numerous, two or three inches long, broad, serrated, rough, and somewhat hoary: the flowers are small and yellowish, or brownish, and stand in umbels.

It is common by way-sides with us. C. Bauhine calls it, *Conyza major vulgaris*; others, *Baccharis Montpelicofium*.

Class the Nineteenth. Order the Second.

Division the Second.

Syngenesia Polygamia Superflua, with radiated flowers; the Herbae Flore radiato of authors.

ERIGERON.

THE receptacle is naked; the down is simple; the radii of the corollula are very narrow, and linear.

This genus comprehends the *Conyzella*, *Conyzoides*, and some of the *Senecio's* of Dillenius.

Erigeron pedunculis unifloris lateralibus, calycibus squarrosis.

The single, lateral-flowered Erigeron, with squarrose cups.

**Great, Sweet
Fleabane.**

The root is large, thick, perennial, and fibrated: the stalk is shrubby, ramose, three feet high, and glutinous to the touch: the leaves are three inches long, and near an inch broad, of a pale green colour, hairy, lightly serrated, and viscid to the touch: the flowers are yellow, and resemble those of the common *senecio*; they stand in a kind of spikes, at the tops of the branches.

It is common by way-sides in Italy. C. Bauhine calls it, *Conyza mas Theophrasti*, major *Dioscoridis*.

The other species are, 1. The toad-flax-leaved, annual, Canada *Erigeron*, or *Conyza*. 2. The coronopus-leaved, American *Erigeron*. 3. The ovato-lanceolate-leaved, camphorated *Erigeron*. 4. The short-leaved *Erigeron*. 5. The ramose, longer-leaved, small-flowered *Erigeron*. 6. The larger-flowered *Erigeron*.

SOLIDAGO.

THE receptacle is naked; the down is simple; the radii of the corollula are about five; the squammæ of the cup are imbricated and closed.

This genus comprehends the *Virga aurea* of Tournefort, and some of his *Jacobææ*, as also the *Doriz* and *Jacobæoides* of authors.

Solidago

Solidago caule erecto, racemis alternis erectis.

The erect-stalked Solidago, with alternate, erect clusters of flowers.

Common Golden-rod.

The root is oblong, woody, and tough: the plant rises to two feet high: the stalk is round, rigid, and of a purplish colour: the leaves are an inch and a half long, an inch broad, serrated, and of a dusky green colour: the flowers are very numerous, small, and yellow; they stand in little clusters, toward the top of the stalk, forming a kind of spike.

It is common on heaths and in woods. C. Bauhine calls it, *Virga aurea vulgaris latifolia*.

The other species are, 1. The narrow-leaved, mountain Solidago, with conglomerated flowers. 2. The broad-leaved, serrated Solidago. 3. The narrow-leaved, not serrated Solidago. 4. The broad, smooth-leaved Solidago. 5. The rigid, bay-leaved Solidago. 6. The narrow-leaved, beautiful, panicled, American Solidago. 7. The narrow-leaved, American Solidago, with a less elegant pod. 8. The limonium-leaved Solidago, with the flowers on one side. 9. The very small Solidago. 10. The lesser, glutinous-leaved Solidago. 11. The long, narrow, and glutinous-leaved Solidago. 12. The aurited-leaved, purple-flowered Solidago. 13. The broad-leaved, purple Solidago, called New England Aster. 14. The undulated-leaved, purple Solidago. 15. The New England Solidago, with tripolium flowers. 16. The roundish, smooth, and serrated-leaved Solidago. 17. The broad, rigid-leaved, American Solidago. 18. The linaria-leaved, American Solidago. 19. The willow-leaved, American Solidago. 20. The great-flowered, American Solidago.

A S T E R.

THE receptacle is naked; the down is simple; the radii of the corollula are more than ten; the lower squammæ of the cup are patulous.

This genus comprehends the Aster of Tournefort, and the Helenium and Aster-opteris of Vaillant.

Aster foliis rugosis amplexicaulibus, calycis squammis ovatis patulis.

The rugose, amplexicaule-leaved Aster, with the squammæ of the cup oval and patulous.

Elecampane.

The root is a foot long, and two inches in diameter, brown on the outside, white within, and of an aromatic taste: the radical leaves are a foot and a half long, and six or seven inches broad, rugose, crenated, and hoary underneath: the stalks are five feet high, very thick, and robust; the leaves on them are numerous, and like the radical ones, but smaller: the flowers are very large, and yellow; they stand at the tops of the branches.

It is wild in some places with us, but is cultivated in gardens also, for the sake of its root, which is in great use in the shops as a pectoral. C. Bauhine calls it, *Helenium vulgare*; others, *Enula campane*.

The other species of Aster are, 1. The common, blue Aster, or Aster Atticus. 2. The round-leaved, hairy, great, blue-flowered Aster. 3. The oblong-leaved, great, blue-flowered Aster. 4. The dwarf, mountain Aster. 5. The narrow-leaved, tripolium-flowered Aster. 6. The blue, acrid, field Aster. 7. The great, blue Aster Atticus. 8. The little, blue Aster, or blue Flea-bane. 9. The willow-leaved Aster, called Tripolium. 10. The early, Pyrenean, great-flowered Aster. 11. The small, blue-flowered, tall, autumnal Aster. 12. The broad-leaved, umbellated Aster. 13. The tall, ramose, daisy-leaved Aster. 14. The hyssop-leaved Aster. 15. The ramose, annual Aster, called the umbelliferous Daisy. 16. The great, yellow-flowered, hairy Aster. 17. The conyza-leaved Aster, commonly called Conyza media, and middle Fleabane. 18. The yellow, woolly-leaved, Dutch Aster. 19. The very hoary-leaved Aster. 20. The mullein-leaved, hairy Aster. 21. The glutinous, hyssop-leaved Aster. 22. The long-leaved, mountain, yellow Aster. 23. The long, woolly-leaved Aster. 24. The sea Aster, with thick, rounded, tridentated leaves, called Sampire, and

and golden-flowered Sampire. 25. The laciniated-leaved, marsh Aster. 26. The little, round-flowered Aster, or little Fleabane. 27. The tuberous-rooted, yellow, sea Aster. 28. The smooth, willow-leaved Aster. 29. The primrose-leaved Aster. 30. The jacobæa-leaved Aster.

I N U L A.

THE receptacle is naked; the down is simple; the antheræ terminate in setæ at their bases.

These characters sufficiently distinguish the Inula from all other plants of this class, without a farther description.

S E N E C I O.

THE receptacle is naked; the down is simple; the calyx is cylindric and calyculate, and the summit of the base sphacelated.

This genus comprehends the Senecio of Tournefort and others, and many of the species of Jacobææ of the same authors.

Senecio foliis pinnatis, pinnis linearibus, apice incisis, subtus incanis.

The pinnated-leaved Senecio, with linear pinnæ, divided at the extremities.

Perennial, groundsel-leaved Ragwort.

The root is oblong, tough, and fibrated; the plant rises to three feet high: the stalk is robust, striated, and simple; the leaves are divided into narrow segments, of a dark green colour on the upper surface, and hoary underneath: the flowers are large, yellow, and beautifully radiated; they stand in a kind of umbels, at the tops of the stalks.

It is common in pastures. C. Bauhine calls it, *Jacobæa senecionis folio perennis*.

The other species are, of those called Seneciones by authors, 1. The common Senecio, or Groundsel. 2. The ragwort-leaved, taller Senecio. 3. The tall, great-leaved, American Senecio. 4. The purple-flowered, American Senecio.

Of those called Jacobææ are, 1. The common Ragwort, or Jacobæa. 2. The laciniated-leaved, smaller-flowered Jacobæa. 3. The broad-leaved, water Ragwort. 4. The roundish, serrated-leaved Jacobæa. 5. The round, undivided-leaved Jacobæa. 6. The oblong, serrated-leaved Jacobæa. 7. The long, serrated-leaved Jacobæa, called *Saracens Confound*. 8. The betony-leaved Jacobæa. 9. The tall, marsh Jacobæa, with serrated leaves. 10. The tall, limonium-leaved Jacobæa. 11. The wood-leaved Jacobæa. 12. The blue-green, chrysanthemum-leaved Jacobæa. 13. The large-flowered, finely divided-leaved Jacobæa. 14. The rosemary-leaved Jacobæa. 15. The multiind-leaved, umbellated Jacobæa. 16. The thick, groundsel-leaved, sea Jacobæa. 17. The less jagged Jacobæa, with short petals. 18. The hairy, viscid, thick-leaved Jacobæa. 19. The woolly, narrow-leaved Jacobæa. 20. The white-leaved, sea Jacobæa. 21. The wormwood-leaved Jacobæa. 22. The hawkweed-leaved Jacobæa, called hawkweed *Doronicum*. 23. The peach-leaved Jacobæa. 24. The ferulaceous-leaved, great-flowered Jacobæa. 25. The abrotanum-leaved Jacobæa. 26. The shrubby, abrotanum-leaved Jacobæa. 27. The clary-leaved Jacobæa. 28. The fenchus-leaved Jacobæa. 29. The dandelion-leaved Jacobæa. 30. The undulated-leaved Jacobæa. 31. The purple-flowered, narrow-leaved, laciniated Jacobæa. 32. The tuberous-rooted, African Jacobæa. 33. The procumbent, hypericum-leaved Jacobæa. 34. The willow-leaved, American Senecio.

T U S S I L A G O.

THE receptacle is naked: the down is simple: the squammæ of the cup are even, and are equal to the disk in size.

This genus comprehends the *Tussilago*, *Cacalia*, and *Petalites* of Tournefort and others.

1. *Tussilago scapo imbricato unifloro, foliis subcordatis.*
The imbricated-stalked, single-flowered Tussilago, with sub-
cordate leaves.

Common
Colt's-foot.

The root is slender, very long, creeping, and white: the leaves are of the breadth of a man's hand, sometimes much larger, of a roundish figure, but cordate at the base, and angulated, and denticulated in several parts of the circumference; they stand on long, purplish pedicles, and are hoary underneath: the flowers appear very early in spring, before the leaves; the stalks which support them are five or six inches high, hollow, tender, and imbricated with a kind of oblong squammæ, resembling leaves; one flower stands at the top of each stalk, and is large and yellow.

It is common with us about watery places. C. Bauhine calls it, *Tussilago vulgaris*. It is esteemed a pectoral, and is frequently used in decoctions.

2. *Tussilago scapo imbricato thyrsifero, flosculis omnibus hermaphroditis.*
The imbricated-stalked, thyrsiferous Tussilago, with all the
flowers hermaphrodite.

Butter-
bur.

This species agrees with the former, in the singularity of the flowers appearing early in the spring, before the leaves: the stalks on which these stand are eight or ten inches high, striated, thick, tender, and furnished with a number of squammæ, resembling leaves: the flowers are small, and of a flesh colour; they stand in clusters, and form a kind of spike at the top: the leaves are two feet in diameter, roundish, and of a pale green colour: the root is large, creeping, and fibrated.

It is frequent in watery places. C. Bauhine calls it, *Petasites major et vulgaris*.

The other species are, 1. The *Tussilago*, with shut flowers, called *Anandria*. 2. The smaller *Petasites*, with white flowers. 3. The colt's-foot-leaved *Petasites*. 4. The thick, angular-leaved *Petasites*.

Of those called *Cacalia* there are, 1. The woolly *Cacalia*. 2. The thick, hairy-leaved *Cacalia*. 3. The acute, thin, and smooth-leaved *Cacalia*. 4. The allaria-leaved *Cacalia*. 5. The *Cacalia*, with leaves woolly on both sides.

DORONICUM.

THE receptacle is naked; the down is simple; the squammæ of the cup are arranged in two orders, and are equal, and longer than the disk.

This genus comprehends the *Doronicum* of Tournefort, the *Bellidistrum* of Micheli, and the *Arnica* of Ruppert.

- Doronicum foliis subrotundis pubescentibus.*
The roundish, hoary-leaved Doronicum.

Leopard's-
bane.

The root is oblong, white, creeping, and is jointed, and supposed to represent the figure of a scorpion: the radical leaves are roundish, two or three inches in diameter, soft to the touch, hairy, and of a pale green colour: the stalk rises to eight or ten inches high; it is angulated and hairy: the flowers stand on the tops of the branches, and are moderately large, and yellow.

It is a native of Italy. C. Bauhine calls it, *Doronicum radice scorpii*; others, *Doronicum latifolium*, and *vulgare*.

The other species are, 1. The brachiated-rooted, scorpion *Doronicum*. 2. The plantain-leaved *Doronicum*. 3. The round, serrated-leaved *Doronicum*. 4. The hairy, plantain-leaved *Doronicum*. 5. The rough, long-leaved *Doronicum*. 6. The broad-leaved, great-flowered *Doronicum*. 7. The greatest *Doronicum*, with amplexicaule leaves. 8. The black-rooted *Doronicum*. 9. The dandelion-leaved *Doronicum*. 10. The single-flowered *Doronicum*.

GERBERA.

GERBERA.

THE receptacle is naked; the down is capillary; the radii of the floscules have filaments without antheræ annexed to them.

Of this genus there is but one known species: it is an Æthiopian; the leaves are pinnatifid, and the flowers yellow.

HELENIA.

THE receptacle is naked; the down has a little cup, with five indentings: the calyx of the flower is simple, and formed of a number of leaves.

This genus comprehends the *Heleniastrum* of Vaillant and others.

Helenia foliis decurrentibus.
The decurrent-leaved *Helenia*.

Bastard
Elecampane.

The root is oblong and white: the plant rises to two or three feet high: the stalk is rigid, erect, striated, and alated, the leaves running down it from their bases; the leaves stand very close; they are oblong, narrow, of a pale green colour, and smooth: the flowers stand on the tops of the branches, and are large and yellow.

It is a native of North America. Vaillant calls it, *Heleniastrum folio longiore et angustiore*; others, *Aster luteus alatus*, and *Aster floridanus aureus caule alato*.

The other species are, 1. The broader-leaved *Helenia*. 2. The hairy, tall *Helenia*. 3. The small-flowered *Helenia*.

TAGETES.

THE receptacle is naked; the down is aristated; the calyx is tubulous, and is formed of a single leaf, divided into five segments at the end: the radii of the flowers are five.

1. *Tagetes caule subdiviso diffuso.*
The diffuse, subdivided-stalked *Tagetes*.

French
Barrygold.

The root is composed of a tuft of fibres: the stalk is striated, slender, ramose, diffuse, and two or three feet high: the leaves are large, oblong, pinnated, and of a dark green colour: the flowers stand on the extremities of the branches; they are moderately large, and yellow toward the center, but of a very dark colour elsewhere.

It is a native of Mexico, but is common in our gardens. C. Bauhine calls it, *Tanacetum Africanum*, five *Flos Africanus minor*; others, *Tagetes minor*.

There are several varieties of this species from culture, which are described by some authors as distinct species.

2. *Tagetes caule simplici erecto, pedunculis nudis unifloris.*

The simple, erect-stalked *Tagetes*, with flowers on long pedicles.

African
Barrygold.

The root is fibrous: the stalk is striated, erect, hollow, and two or three feet high: the leaves are large, oblong, pinnated, and of a pale green colour: the flowers stand singly, on long, erect pedicles; they are large, and throughout of a pale yellow colour.

Culture makes many varieties in this species, as the double-flowered, &c. which many authors have described as so many species.

It is a native of Mexico. C. Bauhine calls it, *Tanacetum Africanum majus simpliciflore*; Lobel, *Othonna major polyanthos*.

COTULA.

COTULA.

THE receptacle is naked; the down is emarginated; the corollulæ of the disk are divided into four segments at the extremity, and there are no corollulæ of the radius.

This genus comprehends the *Ananthocyclus* and *Lancifia* of Vaillant and Pontedera.

Cotula foliis lanceolato-linearibus pinnatifidis amplexicaulibus.

The Cotula, with lanceolato-linear, pinnatifid leaves surrounding the stalk.

The root is fibrous: the stalks are round and slender: the plant grows to six or eight inches high, the leaves are pinnatifid, oblong, and narrow, and somewhat resemble those of the coronopus: the flowers stand on the tops of the branches, and are small, naked, and whitish.

It is a native of Ethiopia, in wet places. Dillenius calls it, *Ananthocyclus coronopifolio*; Breynius, *Chrysanthemum chamaemeli facie*.

The other species are, 1. The *Cotula*, with inflated cups. 2. The broader-leaved *Cotula*. 3. The hairy *Cotula*.

BELLIS.

THE receptacle is naked; there is no down to the seeds; the cup is of a hemispheric shape, and equal; the seeds are obversely oval in figure; the receptacle is conic.

Bellis scapo nudo uniflora.

The naked-stalked, single-flowered Bellis.

**The little
Daisy.**

The roots are fibrous: the leaves are oblong and obtuse: the stalks naked and simple, and, at the summit of each, stands a moderately large flower, naturally whitish.

It is common every-where in our meadows. C. Bauhine calls it, *Bellis minor vulgaris*. The plant varies greatly in the height of its stalk and size of its leaves in its wild state; and culture produces yet a greater number of variations in the colour and duplicature of the flower; all these have been described by authors as different species, and hence this single plant has been divided into near fifty.

CHRYSANTHEMUM.

THE receptacle is naked; there is no down to the seeds; the calyx is of a hemispheric figure, and imbricated, and the edges are membranaceous.

This genus comprehends the *Chrysanthemum* and *Leucanthemum* of Tournefort, and the *Bellidoides* of Vaillant.

Chrysanthemum foliis pinnatifidis incisfis, extrorsum latioribus.

The pinnatifid and lacinated-leaved Chrysanthemum.

**Crete, com
Marygold.**

The root is fibrous: the plant rises to two feet high: the stalk is round, smooth, and firm: the leaves are finely divided into oblong and lacinated segments: the flowers stand at the tops of the branches, and are large, and of a beautiful yellow colour.

It is a native of Crete. C. Bauhine calls it, *Chrysanthemum foliis matricariae*.

The other species are, 1. The bluish-green, lacinated-leaved *Chrysanthemum*. 2. The broad, roundish-leaved *Chrysanthemum*. 3. The lesser, oval-leaved *Chrysanthemum*. 4. The ageratum-leaved *Chrysanthemum*. 5. The narrow, dentated-leaved *Chrysanthemum*. 6. The dwarf, ranunculus-leaved *Chrysanthemum*. The varieties of the first described species are very numerous, and are described as distinct species by many.

Of the *Leucanthemæ*, or great Daisies, as they are usually called, there are, 1. The common *Leucanthema*. 2. The great, Alpine, rigid-leaved *Leucanthema*. 3. The great, acute-leaved *Leucanthema*. 4. The obtuse, crenated-leaved, mountain *Leucanthema*.

canthema. 5. The creeping-rooted, broad, serrated-leaved *Leucanthea*. 6. The tansy-leaved *Leucanthea*. 7. The grassy-leaved *Leucanthea*. 8. The coronopus-leaved *Leucanthea*. 9. The broad-leaved, great-flowered *Leucanthea*. 10. The deeply laciniated-leaved *Leucanthea*. 11. The hoary, multifid-leaved, little *Leucanthea*. 12. The silvery, laciniated-leaved *Leucanthea*. 13. The pinnatifid-leaved, acrid *Leucanthea*.

MATRICARIA.

THE receptacle is naked; there is no down to the seeds: the calyx is of a hemispheric figure, and imbricated, and the marginal squammæ are solid, not membranaceous.

Matricaria foliis compositis planis, foliolis ovatis incisis.

Common

The plane, compound-leaved Matricaria, with oval foliola.

Feverfew.

The root is oblong, slender, and fibrated; the plant grows to two or three feet high; the stalk is round, hollow, and erect; the leaves are composed of a great number of short, broad, and laciniated foliola: the flowers stand at the tops of the branches, and are moderately large and white, with a yellow disk.

It is common in dry places. C. Bauhine calls it, *Matricaria vulgaris*. It has been esteemed a good uterine, but is little used at present. Culture makes the flower double and fistulous: sometimes also it is found naked; but these are varieties, not distinct species, as too many have made them.

The other species are, 1. The fine-leaved, scented *Matricaria*. 2. The great-flowered, tawny-leaved *Matricaria*. 3. The bupthalmum-leaved *Matricaria*. 4. The small-flowered, ambrosia-leaved *Matricaria*.

ANTHEMIS.

THE receptacle is paleaceous; there is no down to the seeds: the cup is hemispheric and subequal: the receptacle is of a conic figure.

This genus comprehends the *Chamæmelum* of Tournefort and others.

Anthemis paleis fetaceis, seminibus nudis.

Stinking

The naked-seeded Anthemis, with fetaceous paleæ.

Wormweed.

The root is fibrous and white; the plant rises to a foot and a half high: the stalk is round, green, and striated: the leaves are finely divided into a multitude of oblong, narrow segments, and of a dark green: the flowers stand on the tops of the branches, and are very large, and of a beautiful white.

It is common in our corn-fields and gardens. C. Bauhine calls it, *Chamæmelum fetidum*; others, *Cotula fetida*.

The other species are, 1. The common, sweet-scented *Anthemis*. 2. The *Anthemis*, without smell. 3. The tall, fine-leaved *Anthemis*. 4. The sea Chamomile. 5. The abrotanum-leaved, Alpine *Anthemis*. 6. The very fine-leaved, red-stalked *Anthemis*. 7. The very fine-leaved, large-flowered, scentless *Anthemis*. 8. The yarrow-leaved *Anthemis*. 9. The wormwood-leaved *Anthemis*. 10. The sophia-leaved *Anthemis*.

ACHILLEA.

THE receptacle is paleaceous; there is no down to the seeds: the calyx is of an oval figure, and imbricated: the receptacle is plane.

This genus comprehends the *Millefolium* and *Parnica* of Tournefort.

Achillea foliis lanceolatis obtusis acute serratis.

The lanceolate, obtuse, and acutely serrated-leaved Achillea.

Hand-
lin.

The root is oblong, ramose, creeping, woody, and fibrated: the plant grows to two feet, or more, in height: the stalk is round, erect, robust, and thick set with leaves from the bottom to the top; they are oblong, serrated, and blunt at the extremity: the flowers are small and yellow, and stand in clusters at the tops of the stalks, in a kind of umbels.

It is a native of France and Italy; we have it in our gardens. C. Bauhine calls it, *Ageratum foliis serratis*; others, *Ageratum*.

The other species of *Achillea* are, 1. The common Yarrow. 2. The yellow-flowered, hoary-leaved Yarrow. 3. The broader-leaved Yarrow. 4. The little sweet Yarrow. 5. The common *Parmica*, with serrated leaves. 6. The dwarf, hoary, laciniated-leaved *Parmica*. 7. The shrubby, Santolina-leaved, Cretic *Parmica*. 8. The purple, tanzy-leaved *Parmica*, called purple, mountain Yarrow. 9. The long-clustered *Ageratum*. 10. The yarrow-leaved *Parmica*. 11. The matricaria-leaved *Parmica*. 12. The tall, yellow, Alpine *Parmica*. 13. The elecampane-leaved *Parmica*.

BUPHTHALMUM.

THE receptacle is paleaceous; the down of the seed is no other than an obsolete margin: the sides of the seeds, especially those of the radius, are emarginated. This genus comprehends the *Asteriscus* and *Asteroides* of Tournefort.

1. *Buphtalmum caulibus simplicissimis unifloris, foliis pinnato-multifidis.*

The single-flowered, pinnato-multifid-leaved Buphtalmum.

Bellitory of
Spain.

The root is oblong, thick, tough, and brown: the plant rises to five or six inches high: the leaves are divided into a multitude of fine, narrow, divaricated segments, and are of a deep green: the stalk is round and thick, usually purplish, sometimes green: the flower is large, reddish on the back-side, but white within; only one flower stands on each stalk.

It is a native of Syria. C. Bauhine calls it, *Pyrethrum bellidis flore*. Its root is the *Pyrethrum* of the shops.

2. *Buphtalmum foliis lanceolatis subdenticulatis glabris.*

The smooth, lanceolated, subdenticulated-leaved Buphtalmum.

Willow-leaved
Aster.

The root is oblong and white; the plant grows to two feet and a half high: the stalk is round, erect, and smooth; the leaves are very long, narrow, lanceolated, dentated at the edges, and of a bright green: the flowers stand on the tops of the branches, and are large and yellow.

It is a native of Germany. C. Bauhine calls it, *Aster luteus angustifolius*; others, *Aster salicis folio glabro*.

The other species are, 1. The tanzy-leaved *Buphtalmum*. 2. The annual *Buphtalmum*, with rigid leaves about the flower. 3. The taller, small-flowered *Buphtalmum*. 4. The dwarf, small flowered *Buphtalmum*. 5. The annual, patulous, sea *Buphtalmum*. 6. The perennial, patulous, maritime *Buphtalmum*. 7. The petalitis-leaved *Buphtalmum*.

ANACYCLUS

ANACYCLUS.

THE receptacle is paleaceous; the down is emarginated: the sides of the seeds are membranaceous.

This genus comprehends the Santolinoides of Vaillant and Micheli.

Anacyclus foliis pinnatifidis laciniatis.

The Anacyclus, with pinnatifid-lacinated leaves.

The root is oblong, white, and fibrated; the leaves are three inches long, and half an inch broad, and resemble those of the Coronopus: the stalks are numerous, and six or eight inches high; each has two or three little leaves on it, and at it's top supports a single, globose, yellow flower.

It is a native of Italy. Barrilier calls it, *Pyrethrum cespitosâ radice anthonidis flore*; Micheli, *Santolinoides Alpina*.

The other species are, 1. The oriental, pinnated-leaved *Anacyclus*. 2. The smaller-flowered *Anacyclus*.

VERBESINA.

THE receptacle is paleaceous; the down is aristated: the calyx is composed of a double series of squammæ: the floscules of the radius are about five.

This genus comprehends the Eupatorio-phalacron, and Cerato-cephuloides of Vaillant.

Verbesina foliis decurrentibus undatis obtusis.

The undated, obtuse, decurrent-leaved Verbesina.

The root is fibrous: the plant rises to two feet high: the stalk is round and robust, erect, ramose, and often purplish; the leaves are oblong, of a pale green, undulated at the edges, obtusely pointed, and run down the stalk at their bases, so as to give it an alated appearance: the flowers are large and yellow; they stand at the extremities of the branches.

It is a native of North America. Commelin calls it, *Chrysanthemum Americanum alato caule*.

The other species are, 1. The smaller-flowered *Verbesina*. 2. The tall *Verbesina*, with divided leaves. 3. The dwarf *Verbesina*. 4. The many-flowered *Verbesina*.

SIGESBECKIA.

THE receptacle is paleaceous; there is no down to the seeds: the involucre consists of five leaves, and is proper and patent: the radius is dimidiated.

Of this genus there is but one known species, which is sufficiently distinguished by these characters. It's leaves are turned back always at night; the cups of the flowers are hairy.

TETRAGONOTHECA.

THE receptacle is paleaceous; there is no down to the seeds: the calyx consists of a single leaf, and is plane, and divided into four parts.

These characters sufficiently distinguish the *Tetragonotheca* from all the other plants of this class, without a farther description.

TRIDAX.

THE receptacle is paleaceous; the down of the seeds is simple: the calyx is of a cylindric figure, and imbricated structure: the radii of the corolla are tripartite.

These characters sufficiently distinguish the *Tridax*, without a farther description.

Class

Class the Nineteenth. Order the Third.

SYNGENESIA POLYGAMIA FRUSTRANEA.

Syngenesia, which have the flowers of the disk hermaphrodite, furnished with a stigma, and producing seeds; and the flowers composing the radius without stigmata, and consequently incapable of producing seeds.

HELIANTHUS.

THE receptacle is paleaceous and plane: the pappus of the seeds is composed of two leaves: the calyx is imbricated.

This genus comprehends the *Corona folis* of Tournefort.

Helianthus radice annua.

The annual-rooted Helianthus.

**The great
Sun-flower.**

The root is oblong, white, tender, and fibrated: the plant rises to six feet, or more, in height: the stalk is round, robust, thick, green, and hairy: the leaves are very large, broad at the base, serrated, and terminate in a point: the flowers are yellow, and often more than a foot in diameter.

It is a native of Mexico, but is common in our gardens. C. Bauhine calls it, *Helianthemum Indicum maximum*; others, *Corona folis*, and *Herba maxima*.

The other species are, 1. The smaller-flowered, ramose, perennial *Helianthus*. 2. The tuberous-rooted *Helianthus*, called Jerusalem Artichoke. 3. The great, flowered, perennial *Helianthus*. 4. The long-rooted, small-flowered *Helianthus*. 5. The broad-leaved, tall *Helianthus*. 6. The tall, alated-stalked *Helianthus*. 7. The tall, stromous-rooted *Helianthus*. 8. The great-leaved, small-flowered *Helianthus*. 9. The trachelium-leaved, creeping-rooted *Helianthus*. 10. The tall, *Virga aurca*-leaved *Helianthus*. 11. The pale, yellow-flowered, creeping-rooted *Helianthus*. 12. The willow-leaved *Helianthus*, with alated stalks. 13. The shrubby, lychnis-leaved *Helianthus*. 14. The laureola-leaved, shrubby *Helianthus*. 15. The tricuspidated-leaved *Helianthus*. 16. The *Helianthus*, with deeply divided leaves. 17. The narrow, lacinated-leaved *Helianthus*. 18. The great, triid-leaved *Helianthus*.

RUDBECKIA.

THE receptacle is paleaceous and conic: the pappus is divided by four indentings: the calyx has two series of squamæ.

This genus comprehends the *Obeliscotheca* of Dillenius and Vaillant.

Rudbeckia foliis inferioribus trilobis superioribus indivisis.

The Rudbeckia, with the lower leaves trilobous, the upper undivided.

The root is biennial; the plant grows to two feet high: the stalk is round, rigid, hairy, and very full of branches: the leaves are scabrous, and serrated: the lower ones are divided into three segments each; the others are simple, of a lanceolated figure, and have no pedicles: the flowers stand at the extremities of the branches; they are large and yellow, the disk somewhat brownish.

It is a native of Virginia. Vaillant calls it, *Obeliscotheca trifido folio*.

The other species are, 1. The composite, lacinated-leaved *Rudbeckia*. 2. The oblong, hairy-leaved *Rudbeckia*. 3. The great, scabrous *Rudbeckia*. 4. The broad-leaved, many-flowered *Rudbeckia*. 5. The tall, red-stalked *Rudbeckia*. 6. The small, short-leaved *Rudbeckia*. 7. The great-flowered, hairy *Rudbeckia*.

COREOPSIS

COREOPSIS.

THE receptacle is paleaceous and conic; the pappus is bicornate: the calyx is erect, and formed of several leaves, and surrounded with patent radii at the base.

Coreopsis folis ternatis.
The ternate-leaved Coreopsis.

The root is oblong, fibrated, and perennial: the plant grows to five feet high: the stalk is rigid, firm, round, smooth, and jointed: the leaves stand three on a pedicle, they are moderately large, smooth, of a deep green, and of a firm texture: the flowers are large and yellow, and stand at the extremities of the branches.

It is a native of Virginia. Van Royen calls it, *Rudbeckia foliis compositis integris.*

The other species are, 1. The serrated-leaved *Coreopsis*. 2. The broad-leaved, hairy *Coreopsis*. 3. The smooth, dwarf *Coreopsis*.

CENTAUREA.

THE receptacle is setose: the corollule of the radius are infundibuliform, long, and irregular.

This genus comprehends the *Centaureum majus*, *Jacea*, and *Cyanus* of Tournefort; and the *Calcitrapa*, *Calcitrapoides*, *Rhaponticum*, *Rhaponticoides*, *Jacea*, *Amberboi*, *Cyanus*, and *Crocodilium* of Vaillant.

Vaillant's distinctions of these several genera, as he calls them, are these: The *Calcitrapa* has the calyx armed with single spines, which are large and erect; and the seeds are either naked or coronated. In the *Calcitrapoides*, the calyx has small clustered spines. In the *Rhaponticum*, the calyx is formed of lax, undivided membranes. In the *Rhaponticoides*, it is formed of lanceolated and acuminate squammæ. In the *Amberboi*, the squammæ of the calyx are obtuse and simple. In the *Jacea*, the squammæ of the calyx are ciliated. In the *Cyanus* also, the squammæ are ciliated, but shorter; and, in the *Crocodilium*, the squammæ of the calyx are aculeated, and the seed is downy and plumose.

Centaurea calycibus ciliatis, ciliis setaceis reflexis.

The Centaurea, with ciliated calyces; the cilia setaceous and reflex.

The root is fibrous; the plant rises to two feet and a half high: the stalks are striated, angular, hairy, and ramose: the leaves are large, oblong, broad, and whitish, an inch and a-half long, and half an inch broad: the flowers are large and purple: the heads usually stand three together, and are surrounded with a beautiful reticulation, formed of the cilia, or hairs of the squammæ of the cup.

It is a native of Germany. C. Bauhine calls it, *Jacea latifolia capite hirsuto.*

The other species are: Of the *Jacea* kind, 1. The common, black *Jacea*. 2. The jagged-leaved *Jacea*. 3. The narrow-leaved *Jacea*. 4. The dwarf, undivided-leaved *Jacea*. 5. The great, squamose-headed *Jacea*. 6. The narrow-leaved, hairy-headed *Jacea*. 7. The larger, scabious-like, lacinated-leaved *Jacea*. 8. The Cretic, squamated *Jacea*. 9. The hoary, hispid-headed *Jacea*. 10. The white, starbe-leaved *Jacea*. 11. The tall, succory-leaved *Jacea*. 12. The hairy, rocket-leaved *Jacea*. 13. The jagged-leaved, silvery-cupped *Jacea*. 14. The great, undivided-leaved, silvery-cupped *Jacea*, or *Storbe*. 15. The smaller *Storbe*. 16. The purple, serrated-leaved *Jacea*. 17. The blue, *calcitrapa*-leaved *Jacea*. 18. The evergreen, Portugal *Jacea*. 19. The cerinthe-leaved *Jacea*. 20. The broad-leaved, Spanish *Jacea*, with hairy fibres. 21. The white, woolly *Jacea*. 22. The styrax-leaved, tree *Jacea*. 23. The prickly, hoary, Cretic *Jacea*. 24. The undulated-leaved, woolly *Jacea*. 25. The linaria-leaved *Jacea*. 26. The rosemary-leaved *Jacea*. 27. The long, narrow, and hoary-leaved, Cretic *Jacea*.

Of those called *Cyanus* are, 1. The common, great *Cyanus*. 2. The long-leaved *Cyanus*. 3. The pinnated-headed *Cyanus*. 4. The great, sweet, oriental *Cyanus*.

5. The oblong-headed Cyanus. 6. The fistulous-flowered, oriental Cyanus. 7. The exotic Cyanus, called Amberboi. 8. The hieracium-leaved Cyanus. 9. The long-leaved, shrub Cyanus. 10. The common, blue-corn Cyanus. The varieties of this last species are very numerous; authors make near twenty species of them.

Of those called Centaureum there are, 1. The common, lacinated-leaved Centaureum. 2. The undivided-leaved Centaureum. 3. The artichoke-leaved Centaureum. 4. The yellow, Alpine Centaureum. 5. The jagged-leaved, African Centaureum. 6. The hoary, elecampane-leaved Centaureum. 7. The narrow-leaved, great Centaureum; these two last are called Rhapontics. 8. The low, hoary Centaureum. 9. The great, mullein-leaved, short-stalked Centaureum. 10. The lacinated, woolly-leaved Centaureum. 11. The coronopus-leaved Centaureum.

Class the Nineteenth. Order the Fourth.

SYNGENESIA POLYGAMIA NECESSARIA,

Syngenesia, in which the flowers of the disk are hermaphrodites but want the stigma, and therefore produce no seeds; and the flowers of the radius are female, and produce seeds.

SILPHIUM.

THE receptacle is paleaceous; the pappus of the seeds is emarginated or bicornate: the calyx is imbricated and squamose.

This genus comprehends the *Asteriscus* of Dillenius. The characters sufficiently distinguish it, without a farther description.

CHRYSOGONUM.

THE receptacle is paleaceous; the pappus of the seeds is composed of a single leaf, and is tridentated: the calyx consists of five leaves; the seeds are inclosed in a little cup, formed of four leaves.

These characters sufficiently distinguish the *Chrysogonum*, without a farther description.

MELAMPODIUM.

THE receptacle is paleaceous; the pappus of the seeds is composed of a single leaf, hollowed with an oblong furrow: the calyx consists of five leaves; the receptacle is conic.

These characters sufficiently distinguish the *Melampodium*.

MICROPUS.

THE receptacle is paleaceous: there is no pappus to the seeds: the calyx is calyculated; and the corolla is of the naked kind, or has no radius.

This genus comprehends the *Gnaphalodes* of Tournefort. Of this genus there is but one known species.

MICROPUS.

The root is oblong, slender, white, and tough: the plant is procumbent, and the stalks round, white, and woolly: the leaves are oblong, soft to the touch, and of a whitish colour: the flowers are small, and stand at the extremities of the branches.

It is a native of the sea-coasts of Portugal. Tournefort and others call it, *Gnaphalodes Lusitanica*.

ERIOCE-

ERIOCEPHALUS.

THE receptacle is somewhat hairy; there is no down to the seeds: the calyx is composed of ten equal leaves: the radii of the flower are five.

These characters sufficiently distinguish the *Eriocapalus*, without a further description.

ARCTOTIS.

THE receptacle is fetose; the pappus is of an ovated figure: the calyx is imbricated; and the squamæ it is composed of are lax and glossy at the base.

This genus comprehends the *Arctotheca* of Vaillant, and the *Anemonospermum* of Commelin.

Arctotis foliis pinnatifido-laciniatis.

The Arctotis, with pinnatifido-lacinated leaves.

The root is fibrous and white: the plant grows to two feet high; the stalk is round, striated, and weak; the leaves are three inches long, an inch, or more, in breadth, deeply divided into segments to the middle rib, and those segments lacinated: the flowers stand at the extremities of the branches; they are large, and of a flesh colour.

It is a native of Africa. Commelin calls it, *Anemonospermum Jacobææ folio*.

The other species are, 1. The large-leaved *Arctotis*. 2. The procumbent, divided-leaved *Arctotis*. 3. The great-flowered, lacinated-leaved *Arctotis*. 4. The rigid-stalked, smaller-flowered *Arctotis*.

OSTEOSPERMUM.

THE receptacle is naked; there is no pappus to the seeds: the calyx is composed of many leaves: the seeds are globose, coloured, and of a bony hardness.

This genus comprehends the *Chrysanthemoides* of Tournefort, and the *Monilifera* of Vaillant. These characters sufficiently distinguish it, without a further description.

CALENDULA.

THE receptacle is naked; there is no pappus to the seeds: the calyx is composed of numerous leaves, and is equal: the seeds of the disk are membranaceous.

This genus comprehends the *Caltha* of Tournefort, and the *Demorphothea* of Vaillant.

Calendula foliis ovatis obtusis dentatis.

The oval, obtuse-leaved Calendula.

The root is white and fibrous: the plant is procumbent or oblique, very rarely quite erect: the stalk is round and striated, of a pale green, and tender: the leaves are oblong, broad, dentated, and obtuse: the flowers stand on the tops of the branches; they are moderately large, and are of a violet colour on the outside, and white within.

It is a native of Africa. Tournefort calls it, *Caltha Africana flore intus albo*.

The other species are, 1. The common garden *Marygold*. 2. The larger, many-flowered *Calendula*. 3. The dwarf, field *Calendula*. 4. The woolly, Portugal *Calendula*. 5. The little-flowered, erect, African *Calendula*.

OTHONNA.

THE receptacle is naked: the pappus of the seeds is plumose: the calyx is of a subcylindric figure, and is composed of one leaf, divided into many segments.

This genus comprehends the *Jacobæastrum* of Vaillant.

Oibonna foliis subcordatis, caule subnudo simplicissimo.

The subcordated-leaved Oibonna, with a simple, almost naked stalk.

The root is large, tuberous, and yellowish: the radical leaves are numerous, large, roundish, but somewhat cordated and angulated, and have pedicles a foot long: the stalk is round, thick, hoary, and three feet high: the leaves on it are few; they are roundish and sinuated a little: the flowers are large and yellow; they stand in a kind of spike at the top of the stalk.

It is a native of Russia. Amman calls it, *Jacobæastrum cacaliæ folio*.

The common, hoary, sea Jacobæ, has some right to be of this genus. It's calyx is indeed composed of several leaves, but it is not calyculated at the base, as in the *Jacobææ*.

SPHÆRANTHUS.

THE receptacle is naked: there is no pappus to the seeds: the calyx is imbricated, and contains several calyculi, each composed of five leaves, and containing a single flower.

These characters sufficiently distinguish the *Sphæranthus*, without a farther description.

MILLERIA.

THERE is scarce any visible receptacle; the seeds have no pappus: the calyx is composed of three valves: the radius of the corolla is dimidiated.

These characters sufficiently distinguish the *Milleria*, without a farther description.

Class the Nineteenth. Order the Fifth.

SYNGENESIA POLYGAMIA MONOGAMIA.

CORYMBIUM.

THE calyx is of a prismatic form; it is composed of two leaves, and contains a single flower: the corolla of the floscule is of an infundibuliform shape, and divided into five segments at the edge: the seed is single, and is placed under the receptacle.

It is a North American, and is sufficiently distinguished by these characters, without a farther description.

JASIONE.

THE common calyx is formed of ten leaves: the corolla is regular, and consists of five petals: the fruit is a capsule placed under the corolla, and contains two cells.

These characters sufficiently distinguish the *Jasione*, without a farther description.

LOBELIA.

THE calyx is divided into five segments: the corolla is irregular, and consists of a single petal: the fruit is a capsule placed under the flower, and contains three cells.

This genus comprehends the *Dortmanna* of Rudbeck, the *Laurentia* of Micheli, the *Rapuntium* of Tournefort, and the *Flos Cardinalis* of Rivinus.



18



19



Theobroma
B. Cole. fenzl.

Hypericum 13



Citrus



Chondrilla



Hieracium



Lientodon



Cantananche



Fragopogon



Gundelia



Bidens



Echinops



Xeranthemum



Doronicum



Othonna



Chrysanthemum



Buphthalmum



Anacyclus

Fragens





Lobelia caule erecto, foliis lanceolatis serratis, spica terminali.

The erect Lobelia, with lanceolated, serrated leaves, and a terminatory spike.

The root is white, creeping, fibrated, and full of a milky juice: the plant rises to two feet high: the stalk is round, striated, and of a pale green colour: the leaves are oblong, smooth, serrated, and of a dusky green colour: the flowers are large, and of a beautiful scarlet; they stand in a spike, half the length of the stalk.

It is a native of Virginia. Morison calls it, *Rapuntium galeatum Virginianum coccineo flore majore*; Ruppis, *Cardinalis Rivini*.

The other species of *Lobelia* are, 1. The oval-leaved *Lobelia*, with inflated cups. 2. The great, blue, long-spiked *Lobelia*. 3. The small-flowered, virga aurea-leaved *Lobelia*. 4. The tall, cirsum-leaved, green-flowered *Lobelia*. 5. The purple, trachelium-leaved *Lobelia*. 6. The small, acrid, violet-coloured-flowered *Lobelia*. 7. The narrow-leaved, African *Lobelia*. 8. The pinaster-leaved, Ethiopian *Lobelia*. 9. The coronopus-leaved *Lobelia*. 10. The linaria-leaved *Lobelia*.

V I O L A.

THE calyx is composed of five leaves; the corolla is composed of five petals, and is irregular, and corniculated behind: the fruit is a capsule within; the flower formed of three valves.

Viola stomibut teretibus reptantibus, foliis subrotundis.

The round-leaved, creeping Viola.

The yellow, marsh Violet.

The root is fibrous, and sends out several oblong, round, tender, creeping stalks: from these, at certain distances, grow tufts of leaves; they are small, round, and crenated at the edges, and stand on moderately long pedicles: among these rise other pedicles, of an inch or two in length, on the summit of each of which stands a small, yellow flower, like the common blue Violet in shape.

It is a native of our marshes in the north of England. C. Bauhine calls it, *Viola Alpina rotundifolia lutea*.

The other species of *Violet* are, 1. The common, spring Violet, with blue or white flowers. 2. The oblong-leaved, blue Violet. 3. The trachelium-leaved Violet. 4. The round-leaved, smooth, blue, marsh Violet. 5. The lacinated-leaved Violet. 6. The little, thick-leaved Violet. 7. The small, narrow-leaved, white-flowered Violet. 8. The erect Violet, called *Viola arborescens*. 9. The yellow, arborefcnt Violet. 10. The three-coloured, sweet Violet. 11. The three-coloured, narrow-leaved Violet. 12. The great, yellow-flowered Violet. 13. The roundish-leaved, great, yellow-flowered Violet. 14. The great-flowered, blue, mountain Violet. 15. The common Panfy, or garden, three-coloured Violet. 16. The two-coloured, weak-stalked, field Violet. 17. The long-leaved, shrubby, Spanish Violet. 18. The granadilla-leaved Violet. 19. The tescium-leaved, long-spurred Violet. 20. The crenated, basil-leaved Violet. 21. The nummularia-leaved, little, Alpine Violet. 22. The common, upright, long-leaved, American Violet. 23. The upright, cucumber-leaved, Virginian Violet.

I M P A T I E N S.

THE calyx is composed of two leaves; the corolla is irregular, and is composed of five petals; the nectarium is exscullated; the fruit is a capsule within the flower, formed of five valves.

This genus comprehends the *Balsamina* of Tournefort.

Impatiens pedunculis unifloris aggregatis, foliis lanceolatis, nectariis flore brevioribus.

Balsam.

The aggregate, pedunculed Impatiens, with lanceolated leaves.

The root is composed of a tuft of fibres: the plant rises to two feet high: the stalk is round, hollow, tender, succulent, and remarkably thick: the leaves are three inches long, and an inch broad, serrated, and of a pale green colour: the flowers stand on slender, drooping pedicles, arising from the axils of the leaves; they are numerous and large, of a pale red, or whitish, colour: the fruit is a large, rough, pointed capsule, which, on the least touch, when ripe, bursts, and throws out its seed to a great distance.

It is a native of Ceylon, but is frequent in our gardens. C. Bauhine calls it, *Balsamina furcina*. Its flowers are very different in colour, variegation, and size; and hence authors have made several species from this one.

The other really distinct species of the *Impatiens* are, 1. The small-flowered, narrow, crenated-leaved *Impatiens*. 2. The narrow, undivided-leaved, small-flowered *Impatiens*. 3. The yellow-flowered *Impatiens*, called podded Arinart, and *Noli-metangere*. 4. The broader-leaved, purple-flowered *Impatiens*. 5. The great, narrow-leaved, Virginian *Impatiens*, with variegated red and yellow flowers.

Class the Twentieth.

GYNANDRIA.

Plants whose stamina are placed either on the style, or on the receptacle, which is elongated into the form of a style, and carries on it both the pistil and stamina.

OF the several genera of this class some have two stamina to each flower, some have three, some four, some five, some six, some ten, some an indeterminate larger number. They may hence, therefore, be naturally arranged into several distinct orders.

Class the Twentieth. Order the First.

GYNANDRIA DIANDRIA.

Plants which have two stamina growing on the style.

ORCHIS.

THE nectarium of the corolla is of a corniculated form, and is situated at the hinder part of the flower.

Orchis bulbis indivisis, nectariis labio quadrisido crenulato, cornu obtuso.

The undivided, bulbed Orchis, with the lip of the nectarium crenulated and quadrisid.

Fool's-
stones.

The root is composed of two oblong, roundish bulbs, connected together; they are whitish, full of a mucilaginous juice, and fibrated: the leaves are six inches long, and two broad, narrow at the base, and terminated by an obtuse point, of a deep green colour, and often spotted with black: the stalk is round, succulent, and a foot high: it has two or three leaves like the radical ones, but smaller, and, at its top, stands a spike, of two inches long, of purple flowers, moderately large, and beautiful.

It is common in our meadows. C. Bauhine calls it, *Orchis morio mas*.

This

This species varies extremely in the size and colour of the flower, in its height, and in the variegations of the leaves: authors have hence made no less than fourteen species of it, under the names of *Orchis morio procerior majore flore*, *Orchis morio femina parva*, *Orchis morio femina vulgaris*, *Orchis serotina angustio folio*, *flore niveo*, *roseo*, *carneo*, *variegato*, &c.

The other really distinct species of *Orchis* are, 1. The open-flowered, or great, military *Orchis*. 2. The low, military *Orchis*. 3. The green-flowered, strong-smelling *Orchis*. 4. The white-flowered, bifoliate *Orchis*. 5. The conglomerated, spiked, mountain *Orchis*. 6. The broad-leaved, palmated *Orchis*, with long spurs. 7. The *Orchis*, with fasciculated, filiform roots, called purple Bird's-nest. 8. The broad-leaved, compact-spiked *Orchis*. 9. The sweet, purple, mountain *Orchis*. 10. The globose-flowered *Orchis*. 11. The grassy-leaved *Orchis*. 12. The man *Orchis*. 13. The smaller-flowered, man *Orchis*. 14. The small, purple, stinking *Orchis*. 15. The trifoliate, purple *Orchis*. 16. The fly *Orchis*. 17. The variegated, larger-flowered, fly *Orchis*. 18. The small, yellow-flowered, fly *Orchis*. 19. The broad-leaved, butterfly *Orchis*. 20. The narrow-leaved, butterfly *Orchis*. 21. The spider *Orchis*. 22. The long-tongued, Italian *Orchis*. 23. The common, palmated, pale-flowered *Orchis*. 24. The tall, galecrulate, palmated *Orchis*. 25. The narrow-leaved, sweet-scented, palmated *Orchis*. 26. The white, palmated, strong-scented *Orchis*. 27. The black-flowered, narrow-leaved, palmated *Orchis*.

SATYRIUM.

THE nectarium is of the form of a scrotum, or inflated and didymous, and is situated behind the flower.

Satyrium bulbis indivisis, nectarii labio trifido, foliis lanceolatis.

The undivided-bulbed *Satyrium*, with lanceolated leaves, and with the lip of the nectarium trifid. Goat-flones.

The root is composed of two large bulbs, each of the size of a walnut: the leaves are large, oblong, broad, and obtusely pointed: the stalk grows to three feet high; it is succulent, tender, and striated: the flowers are numerous, and form a spike at the top; they are variegated with green, purple, and white, and have an extremely long beard hanging from each of them.

It is a native of England, but is very rare. C. Bauhine calls it, *Orchis barbata* *odore hirci brevioris latioreque folio*; others, *Trago-orchis*.

The other species are, 1. The palmated *Batrachite*, or *Frog Orchis*. 2. The broader-leaved, small-flowered *Satyrium*. 3. The dusky-coloured-flowered *Satyrium*.

SERAPIAS.

THE nectarium is oval and gibbous, and the labium is of an oval figure. This genus includes the *Helleborine* of Tournefort.

Serapias bulbis fibrosis, nectarii labio obtuso petalis brevioris.

The fibrous-bulbed *Serapias*, with the lip of the nectarium shorter than the petals. Broad-leaved, bastard Hellebore.

The root is composed of compact clusters of fibres: the leaves are oblong, broad, obtusely pointed, and nervous: the stalk rises to a foot and a half, or more, in height, and is simple, round, and hoary; the leaves on it are like the radical ones, and have no pedicles; they are three inches long, and two broad: the flowers are small, and of a green and purple colour; they form a kind of lax spike, reaching from the middle to the top of the stalk.

It is not uncommon with us in woods. C. Bauhine calls it, *Helleborine latifolia montana*.

The other species are, 1. The smaller-flowered, broad-leaved *Serapias*. 2. The long and narrow-leaved, purple-flowered *Serapias*. 3. The long-leaved, marsh *Serapias*.

pias. 4. The large, green-flowered, long-leaved Serapias. 5. The smaller, short-leaved Serapias.

HERMINIUM.

THE nectarium is hollowed and carinated, and it's lip is trisid or bisid.
This genus comprehends the Monorchis of Micheli.

Hermidium bulbo supra radicato, caule folioso. **Musk**
The leafy-stalked Herminium, with fibres above the bulb. **Orchis.**

The root is a single bulb, of the bigness of a nut: the plant rises to eight inches high: the stalk is round, slender, and green: the leaves are an inch and a half long, and half an inch broad: the flowers are small and yellowish, and have a very sweet scent; they stand in form of a slender spike, at the top of the stalk.

It is a native of most parts of Europe, but is no where very frequent. Authors call it, *Orchis odorata molchata*, five *Monorchis*.

The other species are, 1. The trifoliate, naked-stalked Herminium. 2. The larger-flowered Herminium.

NEOTIA.

THE lip of the nectarium is pedent, and usually undivided, and has a denticulation on each side.

This genus comprehends the *Nidus avis* of Tournefort, and the *Corallorhiza* of Ruppert.

Neotia bulbis fasciculatis, nectarii labio bifido. **Bird's**
The fasciculated-bulbed Neotia, with the lip of the nectarium **nest.**
bifid.

The root is composed of compact bundles of fibres: the plant rises to a foot, or more; in height: the stalk is whitish, round, and succulent: the leaves are numerous, short, membranaceous, thin, striated, obtuse, and usually somewhat emarginated, or cordated, at the top: the flowers are of a dusky colour, and moderately large; they stand in form of a thick, short spike, at the tops of the stalk, and in shape and size resemble those of the orchis's.

It is a native of our woods, but is not common. C. Bauhine calls it, *Orchis abortiva fulca*: when decaying, it is throughout of a dusky brown colour.

The other species are, 1. The double-bulbed Neotia, or female *Monorchis* of C. Bauhine. 2. The *Triorchis* of authors, or triple Ladies Traces.

OPHRYS.

THE nectarium is a dependent lip, bisid, and marked with a denticulation on each side.

Ophrys foliis ovatis. **Common**
The ovated-leaved Ophrys. **Twyblade.**

The root is composed of a multitude of thick, compact fibres: the plant rises to ten inches, or more, in height: the stalk is round, thick, succulent, and green: at about three inches from the ground it has two leaves, placed opposite; they are three inches long, two inches broad, obtuse, nervous, and of a pale green colour: the stalk is everywhere else naked, and, at it's top, stand a number of small, greenish flowers, like those of the orchis's, forming a kind of spike.

It is common in wet places. C. Bauhine calls it, *Ophris bifolia*; others, *Bifolium vulgare*: there are sometimes three leaves instead of two, but very rarely.

The other species are, 1. The bulbous-rooted Ophrys. 2. The creeping-rooted, marsh Ophrys. 3. The least, or triangular-leaved Ophrys.

LIMODORUM.

THE nectarium is hollow, and formed of a single leaf; it is supported on a pedicle, and is situated within the lower petal of the corolla.

These characters sufficiently distinguish the Limodorum of Linnæus, without a further description; the Limodorum Austriacum of Clusius and others is not of this genus, but is an orchis, mentioned in it's place under that genus.

CYPRIPIEDUM.

THE nectarium is ventricose, inflated, and hollow.

This genus comprehends the Calceolus of Tournefort, and the Calceolus Mariz of others.

Cypripedium foliis latioribus.
The broad-leaved Cypripedium.

**Ladies
Slipper.**

The root is oblong, oblique, divaricated, and fibrated: the plant rises to a foot, or more, in height: the leaves are large, broad, obtuse, and somewhat hairy: the flower is purplish, large, and stands on a long pedicle: from it's center grows the part which is called the Slipper; this is of the bigness of a pigeon's egg, thin, membranaceous, and inflated, and it's colour is yellowish.

It is a native of the north of England. C. Bauhine calls it, Helleborine flore rotundo, five Calceolus; others, Calceolus Mariz.

The other species are, 1. The narrower-leaved, large-flowered Cypripedium. 2. The American, tall Cypripedium. 3. The smaller, yellow-flowered Cypripedium. 4. The smooth, broad-leaved Cypripedium. 5. The double bulbous-rooted Cypripedium, called the Bee Orchis. 6. The smaller-flowered, double, bulb-rooted Cypripedium.

EPIDENDRUM.

THE nectarium is turbinate, oblique, and reflex.

This genus comprehends the Angureek of Kæmpfer, and the Vanilla of Plumier, 28.

Epidendrum fructu nigrescente inodoro.
The Epidendrum, with a blackish, scentless fruit.

**Barbadoe
Vanilla.**

The root is divaricated and creeping: the plant climbs up the trees that are nearest it, and usually exceeds them in height: the leaves are ten inches long, lanceolated, and four inches broad: the stem is firm, jointed, and of the thickness of a man's finger: the flowers stand in a kind of spikes; they are large, green on the outside, and white within: the fruit is a long, black pod.

It is a native of St Domingo. Plumier calls it, Vanilla flore viridi et albo.

The other species are, 1. The short-leaved Epidendrum. 2. The black-flowered, sweet-podded Epidendrum, or common Vanilla.

Class the Twentieth. Order the Second.

GYNANDRIA TRIANDRIA.

Plants which have three stamina growing on the style.

SISYRINCHIUM.

THE Sisyrrinchium has but a single stigma: the spathe is composed of two leaves: the corolla consists of six petals: the capsule has three cells, and is situate under the corolla.

This genus comprehends the Bermudiana of Tournefort.

*Sisyrinchium caule et foliis anaptychis.**The Sisyrinchium, with edged stalks and leaves.*

The root is fibrated and creeping; the leaves are long, narrow, grassy, of a deep green colour, and edged both ways: the stalk is of the same shape with the leaves, and edged in the same manner, like a sword: the flowers are small and blue.

It is a native of Virginia. Dillenius calls it, *Bermudiana graminea flore minore*.

Class the Twentieth. Order the Third.

GYNANDRIA TETRANDRIA.

Plants which have four stamina growing upon the style.

NEPENTHES.

THE stigma is single; the calyx is divided into four parts; there is no corolla; the fruit is a capsule, containing four cells.

These characters sufficiently distinguish the *Nepenthes* from all the other genera of this class, without a farther description.

Class the Twentieth. Order the Fourth.

GYNANDRIA PENTANDRIA.

Plants which have four stamina growing upon the style.

PASSIFLORA.

THE styles carrying the stigmata are three: the calyx is formed of five leaves: the corolla consists of five petals: the nectarium is a corona, surrounding the style within the petals: the fruit is a berry, supported on a pedicle.

This genus comprehends the *Granadilla*, *Murucuis*, and *Clematis* of authors.

*Passiflora foliis integerrimis ovato lanceolatis.**The Passiflora, with undivided, oval leaves.*

Long-leaved

Passion-flower.

The root is brachiated and spreading: the stem is slender, tough, woody, and brown: the leaves stand alternately, at six inches distance; they are three or four inches long, half as much in breadth, and pointed at the end; they are soft to the touch, and of a fine bright green: the tendrils are numerous, long, and of a bright green: the flowers stand singly on long pedicles, arising from the axils of the leaves; they are of a mixt white, purple, and blue colour, in the several parts, and are two inches in diameter, and very beautiful.

It is a native of America. Plumier calls it, *Clematis Indica flore clavato, foliis oblongis, fructu citriforini*: we have it in our stores.

The other species are, 1. The common Passion-flower. 2. The tricuspidate-leaved, blackish-flowered Passion-flower. 3. The tricuspidate-leaved Passion-flower, with small, yellow flowers. 4. The large, tricuspidate-leaved Passion-flower, with olive-shaped fruits. 5. The olive-fruited, narrower, tricuspidate-leaved Passion-flower. 6. The narrow, tricuspidate-leaved Passion-flower, with little, green flowers. 7. The little-flowered, ivy-leaved Passion-flower. 8. The stinking, tricuspidate, hairy-leaved, white-flowered Passion-flower. 9. The oval-fruited, many-leaved Passion-flower. 10. The colocynth-fruited, many-leaved Passion-flower. 11. The curled-flowered, many-leaved Passion-flower. 12. The round, hairy-fruited, ivy-leaved Passion-flower. 13. The elm-leaved Passion-flower. 14. The oblong, serrated-leaved Passion-flower. 15. The bicornate-leaved, bright red flowered Passion-flower. 16. The broad-leaved, apple-like-fruited Passion-flower. 17. The sweet-scented, many-flowered Passion-flower. 18. The androsæmum-leaved Passion-flower. 19. The lunated-leaved, scarlet Passion-flower, called *Murucuis*.

Class the Twentieth. Order the Fifth.

GYNANDRIA HEXANDRIA.

Plant that have six stamina standing on the style.

ARISTOLOCHIA.

THE stigma is divided into six parts: there is no calyx: the corolla consists of a single petal, and is entire, and of a ligulated form: the capsule contains six cells, and is situated under the corolla.

Aristolochia foliis cordatis, caule erecto, floribus axillari-
buss confertis.

The erect, cordated-leaved Aristolochia, with clustered, ax-
illary flowers.

Clematite
Birthwort.

The root is composed of a great number of thick fibres, which spread every way: the plant rises to two or three feet high: the stalk is striated, firm, and jointed, and supports itself tolerably well erect: the leaves are three inches long, two and a half broad, cordated at the base, and fixed on long pedicles; they stand alternately, one at a joint: the flowers are oblong, and of a pale colour; there stand several of them together, at the axil of the leaves: the fruit is large and round, as big as a small apple.

It is a native of England, but not common; I have met with it in some woods in Kent. C. Bauhine calls it, *Aristolochia clematitis recta*; others, *Aristolochia clematitis*.

The other species are, 1. The blackish-flowered, round-rooted *Aristolochia*. 2. The pale-flowered, narrow-leaved *Aristolochia*. 3. The true, long-rooted *Aristolochia*. 4. The larger-leaved, Spanish, long *Aristolochia*. 5. The smaller-leaved, clematite *Aristolochia*. 6. The many-rooted *Aristolochia*, called *Pistolochia*. 7. The little, hoary *Aristolochia*. 8. The auriculated-leaved, Virginian *Aristolochia*, or Virginian Snakeroot. 9. The knotty-stalked, many-rooted *Aristolochia*. 10. The lanceolated-leaved, oriental *Aristolochia*. 11. The small-leaved, ever-green *Aristolochia*. 12. The white-flowered, clematite *Aristolochia*. 13. The horse-shoe-leaved *Aristolochia*. 14. The oblong-leaved, creeping-rooted, clematite *Aristolochia*. 15. The very long-flowered, cordated-leaved *Aristolochia*. 16. The trifid, or ivy-leaved *Aristolochia*. 17. The great-flowered, trifid-leaved *Aristolochia*. 18. The asarum-leaved *Aristolochia*.

PISTIA.

THE stigma is marked with six depressions, and seems divided into so many parts: there is no calyx: the corolla is formed of a single petal, ligulated, and undivided: the fruit is a capsule, with five cells, placed in the bottom of the corolla.

This genus comprehends the Kadda Pail of the Hortus Malabaricus.

There is but one known species of it, which, in many things, agrees with the *aristolochia*.

PISTIA.

The root is composed of a number of oblong, slender, fibrated tuberosities: it has no stalk: the leaves are ten inches long, and five broad; they have no pedicles, but are gradually broader from the base to the top, and are there deeply sinuated and undulated: the flowers grow without pedicles, in the midst of the leaves; they are oblong, whitish, moderately large, and hairy in the lower part.

It is a native of the East and West Indies. Van Rheede calls it, Kadda Pail.

Class

GYNANDRIA DECANDRIA.

Plants which have ten stamina growing on the style.

HELICTERES.

THE stigma is divided into five parts: the calyx is oblique, and is composed of a single leaf: the corolla consists of five petals: the nectarium is composed of five leaves: the fruit is composed of five intorted capules.

This genus comprehends the *Iflora* of Plumier. There is but one known species of it.

HELICTERES.

The Skrew-tree.

The root is brachiated; the tree grows to twenty feet high; the leaves are oval and pointed, serrated, and of a dusky green, and somewhat hairy; they are four inches long, three broad, and grow sometimes singly, sometimes several together: the flowers are large, yellow, and spotted with black; they stand on pedicles, and grow two or three together from the knots on the stalk; they are two inches long, and, when expanded, an inch wide at the top: the fruit is composed of five slender, long capules, twisted spirally about one another, and resembles a skrew.

The tree is a native of the East and West Indies. Plumier calls it, *Iflora*; Van Rheede, *Iflora Murri*.

Class the Twentieth. Order the Seventh.

GYNANDRIA POLYANDRIA.

Plants which have very numerous stamina growing on the style.

GREWIA.

THE stigma is single; the calyx is composed of five leaves: the corolla consists of five petals, and has a nectariferous squama at the base: the fruit is a berry containing four cells.

Of this genus there is only one known species.

GREWIA.

The root is brachiated and fibrated: the shrub grows to six feet high: the leaves are of an oval figure, and pointed; three inches long, near two broad, crenated, and of a shining green: the flowers stand four or five in a cluster; they are small, greenish on the outside, and white within, and the petals are reflex: the fruit is a small, hairy berry.

It is a native of the East Indies.

CALLA.

THE spathe is plane: the spadix is covered with floscules: there is no calyx, nor are there any petals: the fruits are berries, each containing many seeds.

These characters sufficiently distinguish the *Calla*, without a farther description.

ARUM.

THE spathe is formed of a single leaf, and is of a cucullated form: the spadix is naked in the upper part, but on the lower it has female flowers, and in the middle staminate ones.

This genus comprehends the *Arum*, *Arifarum*, *Colocasia*, and *Dracunculus* of authors.

Arum

Arum acaule foliis hastatis, spadice clavato.

The hastated-leaved Arum, with a clavated spadix.

Common Cuckoo-pint.

The root is a roundish tuberosity, of the size of a walnut, brown on the outside, and white within, and lies at some depth in the earth: the leaves are four inches long, two and a half broad, hastated, undivided at the edges, and of a strong green, often spotted with black: the stem rises to six or eight inches high, and at it's top carries a single spathe, which is large and green, often purple within; in this are contained a number of male and female fructifications, with a long, red, or white body rising above them; when this is fallen, and the spathe withered, there appear a number of red berries on the top of the stalk.

It is common under our hedges. C. Bauhine calls it, *Arum vulgare*.

The other species are, 1. Of those called Arums. 1. The great, white-veined, Italian Arum. 2. The spotted-flowered, Arabian Arum. 3. The dwarf, broad-leaved, Ceylonesc Arum. 4. The many-flowered, Egyptian Arum or Colocasia. 5. The great, black-stalked Arum. 6. The great, nervous-leaved, long-rooted Arum. 7. The white, sweet-flowered, African Arum. 8. The tall, great-flowered, Indian Arum. 9. The water-lily-leaved, esculent Arum. 10. The lesser esculent Arum, with sagittated leaves. 11. The white-flowered, great-leaved, climbing Arum. 12. The narrower-leaved, climbing Arum. 13. The Arum, with great ivy-like, perforated leaves. 14. The sagittated-leaved, arborefcnt Arum. 15. The canna-leaved, caulescent Arum. 16. The rigid, narrow, and acuminate-leaved Arum. 17. The great, cordated-leaved, red-rooted Arum. 18. The great, climbing, yellow-flowered Arum. 19. The bifoliate-spotted, Arabian Arum, called Ardabar. 20. The scorzonera-leaved Arum. 21. The short and narrow-leaved Arum. 22. The very, narrow-leaved Arum.

Of those called Arisarums are, 1. The great, broad-leaved Arisarum. 2. The shorter-leaved Arisarum. 3. The great, beaked-flowered Arisarum. 4. The large, trifoliate Arisarum. 5. The smaller trifoliate Arisarum. 6. The narrower-leaved Arisarum.

Of those called Draconculi are, 1. The common, great garden Dragons. 2. The greater, late-flowering Dragons. 3. The rough-stalked, Indian Dragons. 4. The cyclamen-rooted Dragons. 5. The creeping-rooted, polypody-leaved, prickly Dragons. 6. The many-leaved, smooth-stalked Dragons. 7. The trifid-stalked, many-leaved Dragons. 8. The climbing, American Dragons. 9. The climbing, trifoliate Dragons. 10. The dwarf, trifoliate Dragons. 11. The American, colocasia-leaved Dragons. 12. The long, green, pistilled Dragons. 13. The quinquifid-leaved, Indian Dragons. 14. The trilobate-leaved, Indian Dragons.

DRACONTIUM.

THE spathe is of the form of a boat; the spadix is covered: there is no calyx: the corolla consists of five petals: the berries contain each several seeds.

These characters sufficiently distinguish the Dracontium, without a farther description.

POTHOS.

THE spathe is globose; the spadix is globose and covered; there is no calyx: the corolla consists of four petals: the fruit is a berry containing several seeds.

These characters sufficiently also distinguish the Pothos, without a farther description.

ZOSTERA.

THE spadix is linear, and produces the fructifications only on one side; there is no calyx, nor any corolla: the stamina stand alternately, and the seeds are solitary.

These characters sufficiently also distinguish the Zostera, without a farther description.

Class the Twenty First.

MONÆCIA.

Plants in which the male and female flowers are placed separately on the same plant.

OF the Monæcia some have only one stamen, some have three, some four, some five, some six, and some very numerous ones; some also are monadelphous, or have their stamina connected into one body at their bases; others are Syngenesious, and others Gynandrous. They may therefore be conveniently arranged, from these distinctions, into eight separate orders.

Class the Twenty First. Order the First.

MONÆCIA MONANDRIA.

Plants which have the male and female flowers separate, but on the same plant; and have only a single stamen in the male flowers.

CERATOCARPUS.

IN the male flower, the calyx is divided into two parts; there is no corolla: the stamen is single, and of a very great length.

In the female flower, the calyx is composed of two leaves, and grows to the germin; there is no corolla: the styles are two: the seeds are compressed and bicornate. Of this genus there is only one known species.

CERATOCARPUS.

The root is fibrous; the stalk is slender, erect, ramose, and green: the leaves are long, narrow, and grassy; they are of a pale green, and sharp-pointed: the male flowers grow three together, in the divarications of the branches; the female flowers stand singly in the axæ of the leaves, and are each succeeded by a single hard seed, somewhat like that of the bidens.

It is a native of Russia. Buxbaum calls it, *Ceratocarpus*.

ZANICHELLIA.

THE male flower consists only of a single stamen; it has neither calyx nor corolla: in the female flower, the calyx is composed of a single leaf; there is no corolla: the germina are about four, and the seeds are as many.

This genus comprehends the *Alyoides* of Vaillant, the *Aponogeton* of Pontedera, and the *Graminifolia* of Dillenius.

*Zonichellia foliis longioribus.**The longer-leaved Zonichellia.*

The root is composed of a great cluster of whitish, slender, long fibres: the plant grows to eight or ten inches high: the stalk is round, slender, jointed, and weak: the leaves stand alternately, one at each joint; they are three or four inches long, very narrow, of a dusky green colour, and tender: toward the tops of the ramifications they are shorter and more numerous: the flowers are small and whitish.

It is an inhabitant of the fresh water rivers and ditches in most parts of Europe; we have it in Lincolnshire in many places. Dillenius calls it, *Graminifolia*; C. Baubine, *Potamogeton capillaceum capitulis ad alas trifidis*. There is but one other known species of this genus, which is the shorter, grassy-leaved *Zonichellia*.

CYNOMORIUM.

IN the male flower, the calyx is an amentum, of an imbricated form; there is no corolla: in the female flower, the calyx is in the same amentum with the male; there is no corolla: the style is simple, and the seed is single and roundish.

20



Pistia 21



B. latisculp.

Phyllanthus

Cyrenmorion

Monardica





CYNOMORIUM.

Maltese Fungus.

The Cynomorium has properly neither root nor leaves: it grows to the roots of several different shrubs and plants, in the manner of the broom-rape. It affixes itself to these by a roundish thick base, and leaves a hollow on the root, when taken off. It grows to seven or eight inches high, and is often three quarters of an inch in diameter, usually bent two or three times, very rarely quite strait; it's lower part is thick, covered with short, oval, pointed squammæ; it's upper part, for two thirds of the whole plant, has these squammæ less numerous, and often emarginated, and is loaded with flowers which are minute, and soon fall off. The whole plant is a fine scarlet colour.

It is frequent about the sea-coasts of the island of Malta, growing to the roots of different plants as well as shrubs. Boccone calls it, Fungus typhoides, coccineus, Melitenfis; others simply, Fungus Melitenfis. It is a very powerful astringent.

Class the Twenty First. Order the Second.

MONÆCIA TRIANDRIA.

Plants which have separate male and female flowers on the same plant, and have in each of the male flowers three stamina.

Z E A

IN the male flower, the calyx is a bifidous glume, and has no arisæ or awns: the corolla is also a glume without awns. In the female flower, the calyx is a glume, formed of two valves; the corolla is also a glume, formed of two valves: the style is simple, filiform, and pendulous: the seeds are single, and are immersed in a long receptacle.

The male flowers are arranged in lax and loose spikes, and stand on the upper parts of the plants: the female flowers stand in thick, compact spikes, covered with leaves below the others.

This genus comprehends the Mays of Tournefort, the Indian wheat of authors. There is but one known species of it, though authors, from it's varieties, have made several imaginary ones.

Z E A.

Indian Corn.

The root is fibrous; the plant grows to eight or ten feet high: the stalk is an inch, or more, in diameter, erect, robust, and succulent: the leaves are very numerous, two feet, or more, in length, of a bright grassy green, narrow, and pointed at the extremities: on the upper part of the stalk stand long, loose spikes, or light ears, of a whitish colour, containing the male flowers; and in different parts, lower down, stand the spikes of female flowers, which are succeeded by the seeds; these are large and pressed closely together, forming a very long and thick ear or spike: the most natural colour of the seeds is yellowish, but they vary extremely in this, and are sometimes violet-coloured, sometimes bright red, sometimes black, sometimes quite white: the spikes of male flowers are also sometimes yellow, sometimes red, sometimes blue, and sometimes variegated with two, or more, of these colours: the plant is evidently the same under all these variations, which are no more than the change of colour in our garden-beans, some of which will be purple, others white, on the same plant; yet have all these been made distinct species by authors, under the names of Mays granis violaceis, Mays spica cæruleis, &c.

C O I X.

THE male flowers are formed into a lax spike; the female ones are few in number, and are situated at the base of the male spike.

In the male flowers, the calyx is a glume, containing two flowers, and has no awns: the corolla also is a glume, without any arisæ or awns. In the female, the calyx is also a glume, containing two flowers; and the corolla is a glume without any arisæ: the style is divided into two parts; and the seed is covered by the indurated calyx. This genus comprehends the Lachryma Job of Tournefort and others.

Cox

*Coix feminibus ovatis.**The oval-seeded Coix.***Job's Tears.**

The root is fibrous: the plant grows to three feet high: the stalk is round, slender, and jointed; the leaves are grassy, a foot and half long, and two inches wide: the flowers stand in the axils of the leaves; the spikes are slender and staminate, and at their bottom there are sometimes two seeds, more frequently only one; they are large, beautiful, hard, of a fine polish, and of a purplish colour.

It is a native of North America. C. Bauhine calls it, *Lithospermum arundinaceum*; others, *Lachryma Job*.

The other species are, 1. The broader-leaved Coix. 2. The tall, red-leaved Coix.

CAREX.

IN the male flowers, the amentum is imbricated; the calyx is composed of a single leaf, and there is no corolla. In the female flowers, the amentum is also imbricated; the calyx is composed of a single leaf, and there is no corolla; but in these the nectarium is tridentate and inflated: the stigmata are three; and the seed is of a triquetrous form, and is situated within the nectarium.

This genus comprehends the *Cyperoides* of Tournefort, and the *Scirpoides* of Mont. the *Carex* of Dillenius.

*Carex spicis fœmineis pendulis brevioribus.**The Carex, with the female spikes pendulous and short.***Short-Spiked
Cyperus Grass.**

The root is composed of a great cluster of black, tough fibres: the leaves are two feet, or more, in length, carinated, edged, and pointed at the ends, and of a yellowish-green colour: the stalk is two or three feet high; it is triangular and sharp: on it's top it produces a number of pendulous spikes, an inch and a half in length, and considerably thick, and of a yellowish colour, with a sterile, dusky spike of male flowers, and hermaphrodite ones at the top.

It is common about the sides of ponds. C. Bauhine calls it, *Gramen cyperoides spica pendula brevior*, to distinguish it from another species, which has much longer pendulous spikes.

The other species of *Carex* are, 1. The broad-leaved, brown-spiked *Carex*. 2. The great, broad-leaved, greenish brown-spiked *Carex*. 3. The little, narrow-leaved, greenish-spiked *Carex*. 4. The *Carex*, with very long and slender pendulous spikes. 5. The short-headed, aculeated *Carex*. 6. The short-headed, not aculeated *Carex*. 7. The many-spiked, woolly *Carex*. 8. The rounded, oblong, erect-spiked *Carex*. 9. The great, black, and yellow-headed, vernal *Carex*. 10. The lesser, black, and yellow-headed *Carex*. 11. The *Carex*, with numerous, yellow spikes on the top of the stalk. 12. The *Carex*, with short spikes very distant from one another. 13. The slender-spiked, wood *Carex*. 14. The little, white, many-spiked *Carex*. 15. The narrow-leaved *Carex*, with sessile spikes in the axils of the leaves. 16. The small, thick-spiked *Carex*. 17. The vesicated-spiked, larger *Carex*. 18. The vesicated-spiked, smaller *Carex*. 19. The long-spiked *Carex*, with long, nutant pedicles. 20. The long, yellow spiked *Carex*.

SPARGANIUM.

THE male flowers have a roundish amentum; the calyx is formed of two leaves, and there is no corolla. In the female flowers, the amentum is also roundish; the calyx is composed of three leaves, and there is no corolla: the stigma is bifid; and the fruit is a dry drupe, containing two seeds.

*Sparganium foliis adfurgentibus triangularibus.**The Sparganium, with assurgent, triangular leaves.***Common
Burreed.**

The root is composed of a number of long and thick fibres: the leaves are numerous, two feet long, half an inch broad, triangular, and of a bright green: the stalk is round, thick, tender, and two feet, or more, in height; at it's top stand a number

of

of round clusters of flowers; they are white and small: the fruit, when ripe, is round, of the bigness of a large nutmeg, and echinated.

The plant is common with us about waters. The stalk is sometimes simple, sometimes ramose; and authors have hence erroneously divided it into two species, under the names of *Sparganium ramosum*, and *Sparganium non ramosum*.

T Y P H A.

THE male flowers are arranged into a cylindric amentum: the calyx is composed of three leaves, and there is no corolla. The female flowers form also a cylindric amentum, below the male ones: the calyx has a hairy capillament; there is no corolla: the seed is single; the feta stands on capillary pappus.

Of this genus there is but one known species.

T Y P H A.

The root is oblong, creeping, and fibred: the plant grows to six or eight feet high: the stalk is round, thick, smooth, glossy, firm, and solid, and is jointed at considerable distances: the leaves are grassy, two feet, or more, in length, and not more than an inch broad, triangular, and edged in such a manner, that they will cut the hands on drawing through them; they are thick and spongy, and surround the stalk a great way at their base: the top of the stalk is ornamented with an oblong, reddish, compact, cylindric spike, containing the seeds, with a large quantity of down: the spike, containing the male flowers, stands above this, and is light and slender.

It is common in our ditches. C. Bauhine calls it, *Typha palustris major*. It varies in it's size, and in the thickness of the spike; and authors have hence made two other imaginary species.

P H Y L L A N T H U S.

IN the male flowers, the calyx is divided into three parts, and is of a campanulated figure, and there is no corolla. In the female flowers, the calyx is also divided into three parts, and there is no corolla; the styles are three and bifid: the fruit is a capsule containing three cells; the seeds are single.

Phyllanthus foliis ovatis, caudice arboreo.

The oval-leaved, shrubby Phyllanthus.

The root is brachiated: the shrub grows to five or six feet high, and it's trunk to the thickness of a man's thumb: the branches are numerous, and very slender; the leaves are oval, and placed alternately; they are three quarters of an inch long, near half an inch broad, obtuse, even at the edges, and of a pale green: the flowers are small and white; they stand separately on slender, reddish pedicels, half an inch, or more, in length: the fruit is a little roundish capsule, with six seeds.

It is common in the East Indies in watery places. Van Rheed calls it, *Niruri*.

The other species are, 1. The herbaceous-stalked, pinnated-leaved *Phyllanthus*.
2. The larger-flowered *Phyllanthus*.

T R A G I A.

IN the male flowers, the calyx is divided into three parts, and there is no corolla. In the female flowers also, the calyx is divided into three parts, and there is no corolla: the style is divided into three parts; and the fruit is a capsule of a trilocous form, containing three cells, and in each a single seed.

It is an American, described by Plumier, 12. These characters sufficiently distinguish it, without a farther description.

A X Y R I S.

IN the male flowers, the calyx is composed of four leaves, and there is no corolla. In the female flowers, the calyx is composed of four leaves, and obtuse; there is no corolla: the styles are two, and the seed is single and roundish.

These characters sufficiently distinguish the *Axyris*, without a farther description.

Class the Twenty First. Order the Third.

MONÆCIA TETRANDRIA.

Plants which have separate male and female flowers on the same plant, and have in each of the male flowers four stamina.

U R T I C A.

IN the male flowers, the calyx is composed of four leaves, and there is no corolla: the nectarium is situated in the center, and is of the figure of a cup. In the female flowers, the calyx is formed of two valves: there is no corolla, and the seed is single.

Urtica foliis oppositis, amentis fructiferis globosis.
The opposite-leaved Urtica, with the fructiferous amenta
globose.

**The Roman
Nettle.**

The root is creeping and fibred: the plant grows to three feet in height: the stalk is erect, thick, firm, of a deep green colour, and hairy: the leaves stand in pairs, opposite to one another; they are two inches and a half long, two inches broad, pointed at the extremity, and deeply serrated about the edges: the male flowers are small and greenish, or yellowish: the fruit is large, rounded, and resembles little balls: the plant is all over hairy, and stings on the touch, in the manner of the common Nettle, only more violently.

It is a native of some parts of England, and is kept in our gardens. C. Bauhine calls it, *Urtica urens pilulas ferens*; Lobel and others, *Urtica Romana*.

The other species are, 1. The tripartite-leaved, tall, Siberian *Urtica*. 2. The common, tall *Urtica*. 3. The little, annual *Urtica*. 4. The great, racemous, Canada *Urtica*. 5. The myrrhis-leaved, Canada *Urtica*. 6. The great, hazel-leaved *Urtica*. The lesser, Roman Nettle, called *Urtica pilulifera parietarie foliis*, is only a variety of the other.

B U X U S.

IN the male flowers, the calyx is formed of two leaves: the corolla consists of two petals, and there are in it the rudiments of a germen.

In the female flowers, the calyx consists of four leaves; the corolla of three petals; the styles are three; the fruit is a capsule, with three beaks, and contains three cells, with two seeds in each.

Of this genus there is but one known species, though authors have divided it, from its varieties, into several.

B u x u s.

The Box-shrub.

The root is brachiated: the shrub retains its leaves all the winter: it grows to two feet in height, sometimes to a great deal more: its trunk is thick and robust; its branches numerous: its bark is rough and whitish; its wood is yellow, and very firm: the leaves are short, obtuse, and of a deep green colour: the flowers are small and yellow: the fruit is a dry capsule, of the bigness of a small pea.

It is wild in many parts of England. C. Bauhine calls it, *Buxus arborefcens*.

A L N U S.

IN the male flowers, the calyx consists of a single leaf, divided into four segments at the extremity, and contains three flowers: the corolla is composed of a single petal, divided into four parts. In the female flowers, the calyx is formed of a single leaf, and divided into five segments; it contains two flowers: the fruit is a roundish cone, and the seeds are angulated.

Of this genus there is but one known species.

ALNUS.

ALNUS.

The Alder-tree.

The root is brachiately and spreading: the tree rises to twenty-five feet high, or more, sometimes with a single trunk, but more usually with a number of shoots together: the bark is smooth and purplish; the leaves are roundish, of a dusky green colour, two inches, or more, in diameter, and glutinous to the touch: the flowers are small and greenish: the fruit is a little cone, scarce so large as a nutmeg.

The shrub is common with us by waters. C. Bauhine calls it, *Alnus rotundifolia glutinosa viridis*. Its leaves are usually even at the edges, but sometimes they are curled, or undulated, sometimes serrated a little, and sometimes they are rather oblong than roundish: authors who have observed these several varieties have raised them to species, and made eight or ten *Alni* out of one.

BETULA.

IN the male flower, the calyx is formed of a single leaf, and is divided into three segments, and contains three flowers: the corolla is formed of a single petal, divided into four parts. In the female flower, the calyx is also formed of a single leaf, and is lightly divided into three segments, but it contains only two flowers: the fruit is a cylindric cone: the seeds are on each side edged with a membrane.

Betula foliis acuminatis serratis.
The Betula, with pointed, serrated leaves.

The Birch-tree.

The root is large and spreading: the tree usually grows with a regular trunk, to a considerable height: the branches are numerous; the young shoots slender, tough, and depending; the bark of these is purplish; that of the trunk whitish: the leaves stand on long pedicles; they are of a roundish figure, but terminate in a point, serrated, of a deep green colour, and about two inches in diameter: the male flowers hang in tufts, or catkins: the fruit is a cone, of a cylindric figure, and small.

It is common in our woods. C. Bauhine and others call it, simply, *Betula*.

Class the Twenty First. Order the Fourth.

MONÆCIA PENTANDRIA.

Plants with male and female flowers separate on the same plant, and with five stamina.

XANTHIUM.

IN the male flower, the common calyx is imbricated; the corolla is composed of a single petal, divided into five segments, and of an infundibuliform shape: the receptacle is paleaceous. In the female flower, the calyx is an involucre, formed of two leaves, and containing two flowers: there is no corolla: the fruit is a dry, muricated drupe, divided into two parts, containing two cells, and in each a single seed.

Xanthium caule inermi.
The not prickly stalked Xanthium.

The lesser Bur-dock.

The root is oblong, small, white, and fibrated: the plant rises to two feet high: the stalk is thick, hairy, but not prickly, and is usually spotted: the leaves stand on long pedicles; they are large, roundish, crenated, and usually reddish; they are soft to the touch, and hairy: the male flowers are small and whitish; they stand in clusters in the axils of the leaves: the fruit is oblong and echinated, and sticks to any thing it touches, in the manner of the common burs of the Bur-dock, whence the English name.

It is wild in some parts of England, but is not common; I met with it this last summer in Lincolnshire. C. Bauhine calls it, *Lappa minor*, *Xanthium Dioecoridis*.

The other species are, 1. The great, crooked-spined, American Xanthium. 2. The prickly, jagged-leaved Xanthium.

AMBROSIA.

IN the male flower, the common calyx is formed of a single leaf: the corollæ are each formed of a single petal, of an infundibuliform shape, and divided into five segments: the receptacle is naked. In the female corolla, the calyx is formed of a single leaf, and has five indentings on the belly; it contains only a single flower: there is no corolla: the fruit is a nut, formed of the indurated calyx, and containing only one seed.

Ambrosia foliis trilobis serratis.
The trilobate, serrated-leaved Ambrosia.

Plant: tree:
leaved Ambrosia.

The root is oblong, white, and fibrated: the stalk is robust, hairy, and firm: the plant grows to five feet high: the leaves are large and palmated, or deeply divided into three loog, lanceolated segments; these are serrated, and the whole leaf is hairy: the flowers are greenish and small; they stand in long, slender series.

It is a native of Virginia. Ray calls it, *Ambrosia inodora foliis asperis trifidis*.

The other species are, 1. The common Ambrosia. 2. The tall, mugwort-leaved, scentless Ambrosia.

PARTHENIUM.

IN the male flower, the common calyx consists of five leaves, and the corollulæ of the disk are formed each of a single petal. In the female flower, the corollulæ of the radius are five, two on each side, and a female one in the middle, situated on a single, naked seed.

This genus compreheods the *Parthenastrum* of Nissole, the *Hysterophorus* of Vaillant, and the *Tarchonanthus* of the same and some other authors.

Parthenium foliis compósito-multifidis.
The compósito-multifid-leaved Parthenium.

American
Febrerew.

The root is fibrous and white: the plant grows to two feet high: the stalk is erect, robust, and ramose: the leaves are large, hoely divided, and somewhat resemble those of the common wormwood: the flowers are small and white.

It is a native of Jamaica. Vaillant calls it, *Hysterophorus ambrosiæ folio*.

The other species are, 1. The broad-leaved Parthenium; and, 2. The larger-flowered Parthenium.

I V A.

IN the male flower, the common calyx is formed of three leaves: the corollulæ of the disk are formed each of a single petal, divided into five segments: the receptacle is hairy. In the female flower, the floscules of the radius are five: there is no corolla: the styles are two, and long: the seed is naked and obtuse.

Iva foliis lanceolato-ovatis serratis caule annuo.
The annual-stalked Iva, with lanceolato-ovate, serrated leaves.

The root is oblong, annual, and white: the plant rises to five feet high: the stalk is erect, robust, striated, and hairy: the leaves stand on long pedicles; they are placed opposite, toward the bottom, and alternately toward the top of the stalk, and are serrated, and of a deep green colour: the top of the plant is terminated by a cluster of flowers, which stand alternate, with floral leaves under them.

It is a native of America. Jussieu makes it a *Tarchonanthus*; and Van Royen calls it, *Tarchonanthus foliis cordatis serratis trinerviis*; B. Jussieu.

The other species are, 1. The pereonial, large-flowered Iva. 2. The divided-leaved Iva.

AMARANTHUS.

AMARANTHUS.

IN the male flower, the calyx is formed of three, or of five, leaves: there is no corolla: the stamina are equal in number to the leaves of the cup; they are three or five. In the female flower, the calyx is composed of three, or of five, leaves: there is no corolla: the styles are three: the fruit is a capsule, containing only one cell, and opening horizontally.

Amaranthus racemis cylindraceis pendulis longissimis.
The *Amaranthus*, with very long, pendulous, cylindric clusters.

Great
Amaranth.

The root is white and fibrated: the plant grows to five feet high: the stalk is thick, furrowed, ramose, and usually reddish: the leaves are very large, oblong, scabrous, pointed at the extremity, and usually variegated with green and red: the flowers stand in long clusters, five or six inches, sometimes a foot, in length, growing from the axils of the leaves; they are purplish, and the stamina yellow.

It is a native of Persia and of South America. C. Bauhine calls it, *Amaranthus maximus*. It varies extremely by culture, and has hence been divided by authors into a number of imaginary species.

The more certainly distinct are, 1. The green-spiked, North American *Amaranthus*, 2. The narrower-leaved, shorter-clustered *Amaranthus*. 3. The prickly, East-Indian *Amaranthus*. 4. The broad-leaved *Amaranthus*.

Class the Twenty First. Order the Fifth.

MONÆCIA HEXANDRIA.

Plants with male and female flowers on the same plant, and with six stamina in the male flower.

ZIZANIA.

IN the male flower, there is no calyx: the corolla is a glume, formed of two valves: these have no arista, or awns, and are mixed among the female flowers. In the female flower, there is no calyx: the corolla is a glume, formed of a single valve, of a cucullated form, and terminated by an arista, or awn: the style is divided into two parts: the seed is single, and is placed in the bottom of the corolla, which opens horizontally to let it out.

It is a native of Virginia. These characters sufficiently distinguish it, without a farther description.

Class the Twenty First. Order the Sixth.

MONÆCIA POLYANDRIA.

Plants with male and female flowers on separate parts of the same plant, and with numerous stamina.

POTERIUM.

IN the male flower, the calyx is composed of four leaves: the corolla is formed of a single petal, divided into four segments: the stamina are from thirty to forty: the calyx of the female flower is composed of four leaves: the corolla is formed of a single petal, and divided into four segments: the pistils are two: the fruit is a berry, the outer crust of which is formed of the indurated tube of the corolla.

This genus comprehends the *Pimpinella* of Tournefort and others.

Poterium inerme filamentis longissimis.
The smooth Poterium, with very long filaments.

Burnet.

The root is oblong, slender, and brown: the stalks are angular, brown, and a foot, or more, in height: the leaves are pinnated; the pinnae are numerous, short, and serrated round the edges: the flowers are purplish; the anthers yellow: the flowers are collected into little, roundish, or oval, heads, and the filaments sometimes hang down to an inch in length from them.

It is frequent in dry pastures. C. Bauhine calls it, *Pimpinella*, five *Sanguiforba minor*.

The other species are, 1. The greater Burnet. 2. The tall, auriculated-leaved Poterium. 3. The long-spiked, American Poterium. 4. The agrimony-leaved, scented Poterium. 5. The larger, short-spiked, white-flowered Poterium. 6. The ever-green, prickly Poterium.

SAGITTARIA.

THE calyx of the male flower is formed of three leaves: the corolla is formed of three petals, and the stamina are about four-and-twenty: the calyx of the female flower is formed of three leaves, and the corolla of three petals: there are no pistils: the seeds are numerous and naked.

Sagittaria foliis sagittatis.
The arrow-headed-leaved Sagittaria.

Water Arrow-head.

The root is oblong, divaricated, oblique, white, fungous, and fibrated; from thia rise stolones, of the thickness of a rush, and of two or three feet long, taking root in several places: the leaves are three or four inches long, sagittated at the base, pointed at the extremity; they float on the surface of the water, and are affixed to long pedicles: the stalks are little taller than the leaves; they are nearly round, striated, thick, and fungous: the flowers are beautiful and white; they stand usually three together, and are ornamented in the center with a number of purple anthers.

It is common in shallow waters. C. Bauhine calls it, *Sagitta aquatica latifolia*. It varies greatly in size, and in the shape of the leaves; and authors have hence distinguished it into several species, under the names of *Sagitta latifolia*, and *angustifolia*; *Sagitta major*, *Sagitta minor*, and the like.

MYRIOPHYLLUM.

THE male flower has the calyx formed of four leaves: there is no corolla: the stamina are eight: the calyx of the female flower is composed of four leaves: there is no corolla: the pistils are four; there are no styles: the fruit is composed of four naked seeds.

Myriophyllum floribus omnibus verticillatis.
The Myriophyllum, with all the flowers verticillate.

Small, water Milfoil.

The root is fibrous: the branches spread upon the surface of the mud, and take root in different places: the stalks that are erect rise to two or three inches above the surface of the water: the leaves are pinnated, and the pinnae very fine and slender; five leaves usually stand at a joint; they are largest at the bottom, and smaller all the way up, so that they give the whole plant a pyramidal form: the flowers stand principally on that part of the stalk that is out of the water; they are small and whitish, and stand in round clusters, at distances, above one another.

It is common in shallow waters. C. Bauhine calls it, *Millefolium aquaticum sfoeculis ad nodos*.

The other species are, 1. The larger, water Milfoil. 2. The broad-leaved, water Milfoil.

CERATO-

CERATOPHYLLUM.

THE calyx of the male flower is divided into several segments: there is no corolla: the stamina are from sixteen to twenty in number. The calyx of the female flower is divided also into several segments: there is no style: the seed is single and naked.

This genus comprehends the *Hydroceratophyllum* and *Dichotophyllum* of authors. Of this genus there is but one known species.

CERATOPHYLLUM.

The root is fibrous: the plant grows to a foot, or more, in length, and is usually wholly immersed in the water: the leaves are numerous, and are each divided into four, or into eight, segments: they are harsh to the touch, and of a dusky green colour: the tops of the plant look larger than any other part, and the flowers, which are small and greenish, stand there in the axils of the leaves.

It is common in shallow waters. Tournefort calls it, *Hydroceratophyllum folio aspero quatuor cornibus armato*; and a variety of it, *Hydroceratophyllum folio laevi octo cornibus*.

QUERCUS.

THE calyx of the male flower is divided into five segments at the top: there is no corolla: the stamina are from five to ten in number. The calyx of the female flower is formed of a single leaf, undivided at the edge, and rough: there is no corolla: the styles are from two to five: the seed is single, large, and oval.

Quercus foliis angustis acutis.
The narrow-leaved Oak.

The Willow-leaved Oak.

The root is large and brachiated: the tree grows to a vast height and size: the bark is brown and rough; the wood extremely firm and solid: the leaves stand very thick on the branches: they are four or five inches long, not more than half an inch broad, undivided, and pointed at the ends, and very much resemble those of the common, long-leaved willow: the flowers are small and brownish: the fruit is a large acorn.

It is a native of America. Plukenet calls it, *Quercus falcis folio*.

The other species are, 1. The common Oak. 2. The broad-leaved, ever-green Oak. 3. The chefnut-leaved Oak. 4. The broad and short-leaved, Oak, called the black Oak. 5. The deeply-finnated, or Spanish, Oak. 6. The prickly-leaved, American Oak. 7. The more slightly-finnated, prickly, American Oak. 8. The dwarf Oak, the *Fagus* and *Esculus* of the antients. 9. The echinated-cupped Oak. 10. The African Oak, with long acorns. 11. The little, short-leaved Oak.

These are all called *Quercus* and *Oaks* by authors, but the *Ilex* and *Suber* are also of this genus.

Of the *Ilex* kind there are, 1. The oblong and ferrated-leaved *Ilex*. 2. The narrow, undivided-leaved *Ilex*. 3. The roundish, soft-leaved *Ilex*. 4. The holly-leaved *Ilex*. 5. The woolly-leaved *Ilex*. 6. The narrower-leaved, ferrated *Ilex*. 7. The broad-leaved, spongy, barked *Ilex*, or Cork-tree. 8. The narrow-leaved Cork-tree.

JUGLANS.

THE calyx of the male flower is formed of a single leaf, and is of the shape of a squamma, or scale: the corolla is divided into six parts, and the squammæ are eighteen in number. In the female flower, the calyx is divided into four segments, and situated upon the germen: the corolla is divided into four parts: the styles are two: the fruit is a drupe, with a falcated kernel.

Juglans

Juglans foliis ovalibus, glabris, obsolete ferratis, omnibus subæqualibus.

The oval, smooth, obsoletely serrated-leaved Juglans, with all the leaves nearly equal.

**Common
Walnut.**

The root is brachiated and spreading: the tree grows to a considerable height, and is very ramose and diffuse, from a third of it's height upwards: the leaves are pinnated; the pinne are large, oval, of a faint green colour, and obscurely serrated: the male flowers hang down in long catkins: the fruit is large, and covered with a fleshy rind, of a very disagreeable taste.

It is a native of Germany; we have it every-where in gardens. C. Bauhine calls it, *Nux Juglans*, five *Regia vulgaris*.

The other species are, 1. The lacinated-leaved *Juglans*. 2. The serrated-leaved *Juglans*. 3. The lanceolato-leaved, serrated *Juglans*, or Virginian, black Walnut. 4. The broader and shorter-leaved *Juglans*. 5. The long, narrow, and undivided-leaved *Juglans*. 6. The narrow, serrated-leaved *Juglans*.

F A G U S.

THE calyx of the male flower is of a campanulated figure, and divided into five segments: there is no corolla: the stamina are twelve in number. The calyx of the female flower is indented in four places at the rim: there is no corolla: the styles are three: the fruit is a muricated capsule, formed of what was the calyx; it is composed of four valves, and contains two seeds.

This genus comprehends the *Fagus* and the *Castanea* of authors.

Fagus foliis lanceolatis acuminatis ferratis.

The lanceolate and acuminatelely serrated-leaved Fagus.

**The common
Chestnut-tree.**

The root is brachiated, large, and spreading: the tree is moderately tall, ramose, and diffuse: the leaves are oblong, pointed at the ends, of a bright green colour, and deeply and sharply serrated: the male flowers hang in a kind of catkins; the female flowers stand in the gemmæ, and are succeeded by large, echinated fruits, within which are contained the chestnuts that we eat.

It is a native of Italy, France, and Germany. C. Bauhine calls it, *Castanea fativa*.

The other species are, 1. The dwarf, racemous *Fagus*. 2. The large-leaved, American *Fagus*. 3. The common *Fagus*, or Beech-tree.

C O R Y L U S.

THE calyx of the male flower is composed of a single leaf, divided into three segments, and of a squamose figure; the flower contained in it is but one: there is no corolla: the stamina are eight. In the female flower, the calyx is formed of two leaves, and lacerated: there is no corolla: the styles are two, and the fruit is an oval nut: the male flowers are disposed in form of a long catkin; the female ones are sessile, and included in a gemma, on a different part of the shrub.

Corylus stipulis ovatis obtusis.

The Corylus, with obtuse, oval stipule.

**The
hazel.**

The root is brachiated, fibrated, and diffuse: the shrub grows to ten or fifteen feet high: the leaves are of a roundish figure, rugose, and serrated at the edges: the fruit is a nut of an obtuse, oval figure, included at it's base in a close husk.

It is common in our hedges. C. Bauhine and others call it, *Corylus sylvestris*.

Culture produces from this the several kinds of filbert, or *Corylus fativa*, which, though no more than varieties, are described as species by too many authors. The really distinct species are, 1. The dwarf *Corylus*; and, 2. The cluster-fruited *Corylus*.

CARPINUS.

THE calyx of the male flower consists of a single leaf, and is a ciliated squamula or scale; there is no corolla: the stamina are twenty in number. The calyx of the female flower consists of a single leaf, and is also a ciliated squamula; there is no corolla: the germina are two: the styles of each are two; the fruit is an oval nut.

The male flowers are arranged into a cylindric amentum; the female into an oblong ooe.

Carpinus squammis strobilorum planis.

The Carpinus, with the squammæ of the strobili plane.

The Horn-beam-tree.

The root is spreading; the tree grows to a very considerable height and size; the bark is whitish and smooth; the wood white and firm: the leaves are two inches and a half long, and near two inches broad, sharply serrated, and terminate in a point; they are of a bright green and smooth: early in spring there are catkins hanging from the branches; the fruit is oblong, and somewhat pyramidal.

It is a native of most parts of Europe. C. Baubine calls it, *Ostrya ulmo similis*.

The other species are, 1. The broader-leaved Carpinus. 2. The large, short-fruited Carpinus.

PLATANUS.

THE calyx of the male flowers is a catkin of a roundish figure; the corolla is scarce visible: the antheræ grow round a filament. In the female flowers, the calyx is also a globose amentum: the corolla consists of several petals; the styles have reflex stigmata: the seeds are numerous, and are mucronated with the style, and pappous at the base.

Platanus foliis palmatis.

The palmated-leaved Platanus.

The Oriental Plane-tree.

The root is brachiated; the tree grows to a very considerable size, and is ramose and spreading: the bark is smooth; the wood firm and pale-coloured: the leaves are very large, of a palmated figure, and divided into six or seven parts at the edge; they stand on moderately long pedicles: the fruit is a round, rough ball, of the bigness of a large nutmeg.

It is a native of the East. C. Baubine and others call it, *Platanus orientalis*.

The other species are, 1. The smaller and more deeply divided-leaved Platanus. 2. The lobated-leaved Platanus.

LIQUID AMBAR.

THE common calyx of the male flowers is formed of four leaves; there is no corolla: the stamina are very numerous, slender filaments. The calyces of the female flower are collected into a kind of globe; each of them consists of four leaves; there is no corolla: the styles are two; the fruit is composed of a number of bivalve capsules, formed into a globular body, and each containing several seeds.

There is but one known species of this genus.

LIQUID AMBAR.

The root is brachiated and spreading; the tree grows to a vast size; the leaves are of a very regular and beautiful figure, of the breadth of a man's hand, and divided into several lobes at the end, in the manner of those of the maple: the flowers are small; the fruit is an ecbinated, globular body.

It is a native of America, where a very fragrant resin is obtained from it in great abundance. Ray calls it, *Styrax aceris folio*.

Class the Twenty First. Order the Seventh.

MONOECIA MONADELPHIA.

Plants, with the male and female flowers separate on the same individual, with the stamina in the male ones, connected into one body at their base.

PINUS.

THE calyx of the male flower is composed of four leaves; there is no corolla: the stamina are numerous, and the antheræ are naked. In the female flower, the calyx is a squamma of a strobilus, and contains two flowers; there is no corolla: the pistil is single, and the seed is received into a membranaceous ala.

Pinus foliis geminis primordialibus solitariis ciliatis.
The Pinus, with two leaves together; the primordial
ones single and ciliated.

**The manured
Pine.**

The tree grows to a very considerable height: the trunk is straight; the bark rough and reddish; the wood yellowish, and strongly scented of turpentine: the leaves grow from little tubercles on the bark of the branches, two together; they are united close at the base, but separate afterwards, hollowed inwards, pointed at the ends, very narrow, like rushes, and eight inches long: the cones or fruit are large, of a turbinated figure, and composed of a very beautiful arrangement of squammæ.

It is a native of Italy. C. Bauhine calls it, *Pinus lativa*. The kernels of this fruit are esculent and sweet as an almond; they used to be kept in the shops as restoratives, but they are neglected at this time.

The other species are, 1. The great, long-leaved, swamp Pine of America. 2. The common, wild Pine. 3. The scoder-fruited, wild Pine. 4. The sea Pine. 5. The lesser sea Pine. 6. The low Pine, with green, luli. 7. The very slender-leaved Pine, with purple luli. 8. The Pine, with erect cones.

ABIES.

THE calyx of the male flowers is a gemma; there is no corolla: the stamina are numerous, and the antheræ are furnished with a squammola in the upper part. In the female flowers, the squammule of the strobilus each contain two flowers; there is no corolla: the pistil is single, and the seed is lodged in a membranaceous ala.

Abies foliis solitariis apice acuminatis.

The Abies, with solitary leaves acuminate at the point.

**The Com-
mon Fir.**

The tree is tall; the bark reddish or brownish, and the wood yellowish and resinous: the branches grow regularly; the leaves are of a pale green, narrow, and pungent at the ends: the fruit is a cylindric cone of six inches, or more, in length; these grow on the extremities of the branches, and hang downwards.

It is common in France and Italy. C. Bauhine calls it, *Abies conis deorsum spectantibus*; others, *Picea*.

The other species of Abies are, 1. The yew-leaved Abies, with the cones standing upwards. 2. The long-leaved Abies. 3. The smaller, pectinated, Virginian Abies. 4. The lesser ^{or} long-leaved Abies. 5. The yew-leaved Abies, with the leaves white underneath. 6. The short-leaved Abies.

CUPRESSUS.

CUPRESSUS.

THE calyx of the male flower is a squamma of an amentum; there is no corolla: the anthers are four, and sessile, and have no filaments. In the female flower, the calyx contains two, and is a squamma of a strobilus; there is no corolla: there are hollowed points in the place of styles; the seed is angular.

Cupressus foliis imbricatis erectis.

The Cupressus, with imbricated, erect leaves.

The Cypress-tree.

The root is spreading; the tree grows to a considerable height; the trunk is thick and straight, the bark brown, the wood firm and scented; from the middle to the top it is full of branches: the leaves are of a dusky green, and of an imbricated structure; the fruit is of the size of a small walnut, of an oval figure, and full of cracks on the surface; its colour is a dusky brown; its taste resinous.

It is a native of the Islands of the Archipelago. C. Bauhine calls it, simply, Cupressus.

The other species are, 1. The thicker-leaved Cupressus. 2. The smaller-fruited Cupressus. 3. The acacia-leaved Cypress.

THUYA.

THE calyx of the male flower is a squamma of an amentum; there is no corolla: the stamina are four. In the female flower, the calyx is squamma of a strobilus, and contains two flowers; there is no corolla: the pistil is single, and the seed is surrounded with a membranaceous ala.

Thuya strobilis lævibus, squammis obtusis.

The Thuya, with smooth strobili, and obtuse squammæ.

The Arbor Vita.

The root is spreading; the tree grows to a moderate height: the trunk is erect and knotty; the bark is of a reddish grey; the wood reddish, firm, and resinous: the branches spread horizontally: the leaves are divided into many parts, oblong, compressed, and squamose; they are of a bright green, and of a strong and disagreeable smell: the flowers are small and yellowish; the fruit is a small, oblong cone.

It is a native of North America. C. Bauhine calls it, Thuya Theophrasti; others, Arbor vite.

There is but one other known species of this genus, that is, the Chinese Arbor vite.

THELIGONIUM.

THE calyx of the male flower is bifid; there is no corolla: the stamina are twelve. There is no corolla to the female flower: the calyx is bifid, and the pistil single: the fruit is a coriaceous capsule, containing only a single cell, and in it only one seed.

This genus comprehends the Cynocrambe of Tournefort. There is but one known species of it.

THELIGONIUM.

The root is composed of a closter of white fibres: the stalks are numerous, and a foot and a half long; they are round jointed and procumbent, smooth on the surface, hollow and brittle: the leaves grow two or three at a joint, but not opposite, but all on one side; they are oblong, of a deep green, flattish, when bruised, and one of them at each joint usually stands on a longer pedicel than the others: the flowers are numerous, very small; they stand in closters at the joints of the stalk.

It is a native of France. C. Bauhine calls it, Cynocrambe Dioscoridis; others, Alfine parietarie foliis.

ACALYPHA.

THE calyx of the male flower consists of three, or of four, leaves; there is no corolla: the stamina are from eight to sixteen in number. In the female flower, the calyx is composed of three leaves; there is no corolla: the styles are three; the fruit is a trilocular capsule, containing three cells, with a single seed in each. The full of the male flowers, as also the female ones, which are succeeded by trilocular fruits, both stand in the axils of the leaves.

These characters sufficiently distinguish the Acalypha, without a farther description.

CROTON.

THE calyx of the male flower is cylindric, and indented in five places at the edge: the corolla consists of five petals; and the stamina are from ten to fifteen. The calyx of the female flower is formed of several leaves; there is no corolla: the styles are three, and bifid; the fruit is a capsule, containing three cells, and in each a single seed.

This genus contains the *Ricinoides* and *Heliotropium tricoecum* of authors.

Croton foliis rhombeis repandis, capsulis pendulis, caule herbaceo.

The herbaceous Croton, with rhombic leaves, and pendulous capsules.

The Turnsole Plant.

The root is oblong and slender; the plant rises to ten or twelve inches: the stalk is round and green, but somewhat hoary and ramose: the leaves stand on oblong, hollow pedicles; they are oblong, and bend backwards; they are rugose, of a dusky green, and somewhat hoary, soft to the touch, and sinuated: the male flowers are small and yellow, and stand in clusters on short pedicles: the fruit, which succeeds the female flowers in the axils of the leaves, is affixed to an oblong pedicle; it is trilocular, of a greyish colour, and somewhat rough surface. These fruits, while fresh, rubbed on cloth, give it a green colour, which almost instantly turns to a fine blue.

The plant is a native of France. C. Bauhine calls it, *Heliotropium tricoecum*. The *Succus Lacmus*, or Turnsole, used in dying and painting, is prepared from this plant.

RICINUS.

THE calyx of the male flower is divided into five parts; there is no corolla: the stamina are numerous. In the female flower, the calyx is divided into three parts; there is no corolla: the styles are three, and are bifid: the fruit is a capsule, containing three cells, and in each of them one seed.

Ricinus foliis peltatis, serratis, petiolis glanduliferis.

The peltated, serrated-leaved Ricinus, with glanduliferous pedicles.

The Common Ricinus, or Palma Christi.

The root is long, thick, white, and fibrated: the plant grows to five or six feet high; the stalk is round, thick, hollow, striated, jointed, and of a bluish-green on the lower part, and a purplish colour toward the top: the leaves are very large, palmated, and divided at the edge into six or seven parts: the flowers are small and staminateous, but they stand in a long beautiful spike, on a peculiar peduncle: the capsules are rough on the surface; the seeds oblong.

It is a native of the East. C. Bauhine calls it, *Ricinus vulgaris*; others, *Palma Christi*.

The

The other species are, 1. The smaller, American Ricinus. 2. The deeply, divided-leaved, Ceylon Ricinus. 3. The larger-fruited Ricinus. 4. The rounder-leaved Ricinus.

J A T R O P H A.

THE male flower has no calyx: the corolla is of an infundibuliform shape, and is formed of a single petal: the stamina are ten in number, and are alternately shorter. The female flower has no calyx: the corolla is of the rosaceous form, and consists of five petals: the styles are three in number, and are bifid: the capsule contains three cells, and in each a single seed.

This genus comprehends the Manihot of Tournefort, and the Jussievia of Houstoni.

Jatropha foliis digitatis.

The digitated-leaved Jatropha.

The Cassada plant.

The root is oblong and very thick; the plant grows to six or eight feet high: the stem is firm, but hollow, and full of pith: the leaves are digitated, or composed each of five or seven oblong narrow portions, uniting only at the base, where they are affixed to a long rib; they are smooth, and of a deep green: the flowers are small and yellow.

It is a native of many parts of America, where the natives make a kind of bread from the root, which is very nourishing. C. Banhine calls it, Manihot Indorum foliis Cannabinis; others, Yucca and Cassavi.

The other species of *Jatropha* are, 1. The prickly, vine-leaved *Jatropha*. 2. The large, elm-leaved *Jatropha*. 3. The narrower, elm-leaved *Jatropha*. 4. The climbing, betony-leaved *Jatropha*. 5. The little, germander-leaved, American *Jatropha*.

S T E R C U L I A.

THE calyx of the male flowers is divided into five parts; there is no corolla: the stamina are fifteen. The calyx of the female flower is also divided into five parts; there is no corolla: the germen stands upon a column: the fruit is a capsule, containing several cells, and in each of these are several seeds.

These characters sufficiently distinguish the *Sterculia*, without a farther description.

H U R A.

THE male flowers are arranged into an imbricated amentum: the anthers are sessile, and adhere to the amentum. The female flower has no calyx, nor any corolla: the style is of an infundibuliform shape: the stigma is divided into twelve parts: the fruit is a capsule formed of twelve separate cells, in each of which is a single seed.

Of this genus there is but one known species.

H U R A.

The Sand Box-tree.

The root is spreading; the tree grows to a moderate height; the trunk is thick; the bark smooth and brown, and the wood whitish: the leaves are seven or eight inches long, five broad, and placed on long pedicles; they are of a beautiful green, and finely serrated: the fruit is two inches in diameter, and bursts into twelve lamellate parts, in each of which is a single seed.

It is a native of America. Authors call it *Hura*, and *Arbor crepitans*.

Class the Twenty First. Order the Eighth.

MONÆCIA SYNGENESIA.

Plants having separate male and female flowers on the same plant, and those Syngenesious.

TRICHOSANTHES.

THE calyx of the male flower has five indentings at the edge: the corolla is divided into five segments, and is ciliated; the stamina are three. The calyx of the female flower is indented in five places: the corolla is also formed of a single petal, and divided into five segments, and ciliated: the style is divided into three parts; the fruit is an oblong apple.

This genus comprehends the *Anguina* of Micheli.

Trichosanthes foliis cordato-sagittatis serratis.

The cordato-sagittated, serrated-leaved Trichosanthes.

The root is creeping; the plant rises to a considerable height, if there are things near to support it: the stalk is slender and angular: the tendrils are long, spirally contorted, and green; the leaves are large, cordated at the base, oblong, and terminate in a sharp point; they are serrated, and of a dusky brown: the flowers are moderately large, white, and edged with a vast number of long hairs or filaments: the fruit is oblong, and pointed at the end.

It is a native of the East Indies. Van Rheede calls it, *Toti pira*.

The other species are, 1. The great, roundish-leaved *Trichosanthes*. 2. The angulated-leaved *Trichosanthes*.

MOMORDICA.

THE calyx of the male flower is divided into five segments: the corolla consists of a single petal, and is divided into five segments; the stamina are three. The calyx of the female flower is divided into five parts: the corolla is formed of a single petal, and divided into five segments; the style is divided also into three parts: the fruit is an apple, bursting open with great elasticity.

This genus comprehends the *Momordica* and *Luffa* of Tournefort, and the *Elatarium* of Boerhaave.

1. *Momordica foliis cordatis integris plicato-dentatis.*

The cordated, plicato-dentated-leaved Momordica.

**Wild Cucum-
ber.**

The root is a foot long, and two or three inches in diameter, white, fleshy, bitter, and nauseous: the stalks are numerous and procumbent; they are angulated, rough, and thick: the leaves are roundish, but somewhat oblong, and pointed, aurited at the base, and three inches, or more, in length: the flowers are large, yellow, with greenish veins, and stand at the axils of the leaves; the fruit is of a cylindric form and rough surface, about two inches long, and, when ripe, it bursts with violence on the lightest touch, sending out every way, sometimes to five feet high, a corrosive liquor.

It is common in France. Authors call it, *Cucumis sylvestris*, and *Cucumis asinus*; but very improperly, as it is not at all of the cucumber kind. The succula of the juice of the fruit of this plant is the *Elatarium* of the shops, a violent purge.

The other species are, 1. The angular-fruited *Momordica*, with smooth, roundish leaves, called the round-leaved, male, creeping Balsam. 2. The divided-leaved *Momordica*, called the reticulated, Egyptian Cucumber or *Luffa*. 3. The short-fruited, vine-leaved *Momordica*. 4. The long, yellow-fruited, vine-leaved *Momordica*.

CUCUMIS.

CUCUMIS.

THE calyx of the male flower is divided into five segments: the corolla is formed of a single petal, and divided into five segments also; the stamina are three. The calyx of the female flower is divided into five parts: the corolla is formed of a single petal, and divided into five segments; the pistil is trifid: the seeds have no tumid edge.

This genus comprehends the Melo, Colocynthis, and Anguria of authors.

Cucumis foliis multifidis, pomis globosis glabris.

The multifid-leaved Cucumber, with smooth, globose fruit. **Colocynth.**

The root is fibrous: the stalks are striated, rough, and procumbent, but they grow to a considerable length: the leaves stand singly at the joints, they are placed on long pedicles, and are large, rough, hairy, and divided into a number of segments: the flowers are large and yellow; the fruit is round, and of the bigness of a man's fist, green at first, but, when ripe, of a pale, yellowish colour: the pulp of this fruit is the Colocynth or Coloquintida of the shops, a violent cathartic.

It is a native of the East. C. Bauhine calls it, *Colocynthis fructu rotundo minore.*

The other species of Cucumis are, 1. The common Cucumber. 2. The round-leaved, Egyptian Cucumber. 3. The common Melon. 4. The small-fruited, trifoliate, American Citrul. 5. The American Citrul, with echinated, esculent fruit. 6. The small, round-fruited, cordated-leaved Citrul. The varieties of the Melon-kind are almost endless, but they are not to be accounted as species by the botanist. They are all owing to accident or culture.

CUCURBITA.

THE calyx of the male flower is divided into five parts: the corolla is composed of a single leaf, divided into five segments; the stamina are three. The calyx of the female flower has also five indentings at the edge: the corolla is composed of a single petal, and is divided into five segments; the pistil is trifid: the fruit is an apple, and the seeds have a tumid edge.

This genus comprehends the Pepo, and the Melopepo of Tournefort.

Cucurbita seminis obsolete bicornibus.

The Cucurbita, with obsoletely bicornate seeds.

The root is fibrous: the plant, if supported, grows to a considerable height: the stalks are moderately thick, angulated, and rough; the leaves are very large, often measuring a foot and a half in diameter; they are of a roundish figure, soft to the touch, downy, somewhat divided at the edges, and placed on long furrowed pedicles: the flowers are large, snow-white, and hairy within, and somewhat hairy also on the outside; the fruit is very large and long.

It is a native of many parts of America. C. Bauhine calls it, *Cucurbita oblonga flore albo.*

The other species are, 1. The great-fruited, rough-leaved Cucurbita. 2. The little, rough-leaved Cucurbita. 3. The common Pompon or Pumpkin. 4. The little, yellow-fruited Pompon. 5. The compressed Melopepo. 6. The great, rough-leaved Melopepo. 7. The clypeiform Melopepo. 8. The common Citrul, or divided-leaved Cucurbita.

SICYOS.

THE calyx of the male flower has five indentings at the edge: the corolla is formed of a single petal, divided into five segments; the stamina are three. The calyx of the female flowers is divided by five indentings at the edge: the corolla is formed of a single petal, divided into five segments; the style is trifid: the fruit is a berry, containing only a single seed.

This genus comprehends the *Sicyoides* of Tournefort, and *Bryonoides* of Dillenius.

Sicyos foliis angulatis.

The angulated-leaved Sicyos.

The root is composed of a multitude of white fibres: the stalks are slender, angulated, and climbing; the leaves are large and angulated, of a deep green, and placed on moderately long pedicles: the flower is small; the fruit is rough, or echinoid on the surface, and contains only a single seed.

It is a native of America. Dillenius calls it, *Bryonoides flore et fructu minore.*

The other species are, 1. The lacinated-leaved *Sicyos*. 2. The larger-fruited *Sicyos*.

BRYONIA.

THE calyx of the male flower is divided by five indentings at the rim: the corolla is formed of a single petal, and divided into five segments; the stamina are three. The calyx of the female flower is also dentated: the corolla is formed of a single petal, divided into five segments: the style is trifid; the fruit is a roundish berry.

Bryonia foliis palmatis, utrinque callosè scabris.

The Bryonia, with palmated leaves, scabrous on both sides.

White
Bryony.

The root is of an enormous size, often two feet long, and six or eight inches in diameter, of a whitish colour, and disagreeable smell: the stalks are slender, angulated, and, when supported, grow to a great height: the leaves are broad and palmated, of a pale green colour, and very rough to the touch: the flowers are very small and green; the fruit is a round berry, red, when ripe.

It is common in our hedges. The root is used in some compositions as an antihysterical. Authors call the plant *Bryonia alba*, and *Bryonia alba baccis rubris*.

The other species are, 1. The larger-fruited, deeply, divided-leaved Bryony of Ceylon. 2. The smaller-fruited, lacinated-leaved Bryony. 3. The smooth-leaved, yellow-flowered, African Bryony. 4. The fig-leaved Bryony. 5. The olive-fruited Bryony. 6. The smooth, angulated leaved, American Bryony. 7. The rough, angulated-leaved, American Bryony. 8. The angulated-leaved Bryony, with very small, black fruit.

TREVILLEA.

THE calyx of the male flower is divided into five segments: the corolla is formed of a single petal, divided also into five segments: the stamina are three. The calyx of the female flower is divided into five segments: the corolla is formed of a single petal, and divided also into five segments: the style is trifid; the fruit is a berry, surrounded with a cortical substance.

This genus comprehends the *Nhandiroles* of Plumier. Its characters sufficiently distinguish it, without a farther description.

Class the Twenty Second. Order the Tenth.

MONÆCIA GYNANDRIA.

Plants with several male and female flowers on the same plant, and with the stamina in the male flowers situated upon the rudiments of a style.

ANDRACHNE.

THE calyx of the male flower is composed of five leaves: the corolla is formed of five petals: the stamina are five, and grow upon the rudiments of a style. The calyx of the female flower is formed of five leaves; there is no corolla: the styles are three:

three : the fruit is a capsule containing three cells ; with two seeds in each. This genus comprehends the *Telphoides* of Tournefort and Dillenius.

Of this genus there is but one species, and that is too fully distinguished by its characters, to need any farther description. It is a procumbent, oriental plant.

Class the Twenty Second.

DIOECIA.

Plants which have the male and female flowers on separate plants of the same species.

OF these some have only a single stamen, some two, some three, and so on to ten ; others have twenty, others very numerous stamens, and others are monadelphous, syngenesious, and gynandrious, according to the before established distinctions. They are therefore, according to these obvious characters, to be arranged into several orders.

Class the Twenty Second. Order the First.

DIOECIA MONANDRIA.

Plants that have the male and female flowers on separate plants, and only one anthera.

NAIAS.

THE calyx of the male flower is cylindric, and divided into two parts : the corolla is divided into four segments ; there is no stamen : the anthera is single, oblong, and erect. The female flower has no calyx nor corolla ; the pistil is single, and the fruit is an oval capsule.

This genus comprehends the *Fluvialis* of Vaillant and Micheli.

Naias foliis latioribus serratis.

The broader and serrated-leaved Naias.

The root is fibrous and whitish ; the plant grows to a foot and a half long ; it floats obliquely in the water, seldom standing quite erect : the stalk is round, jointed, ramose, and has some short, robust spines placed at distances on it : the leaves stand usually three at a joint ; they are more than an inch long, about a sixth of an inch broad, of a shining surface, and deeply serrated at the edges : the flowers are moderately large, and stand singly on pedicles of half an inch long, arising from the axils of the leaves.

It is common in fresh waters in many parts of Europe. Ray calls it, *Potamogeton fargazæ simile, lucens, foliis margine dentatis*.

There is but one other known species, which is the narrow-leaved *Naias*.

Class the Twenty Second. Order the Second.

DIOECIA DIANDRIA.

Plants which have the male and female flowers on separate plants, and have two stamina.

VALLISNERIA.

THE calyx of the male flower is a spathe, divided into two parts : the spadix is covered with stamules ; the corollæ are tripetalous. The calyx of the female flower is a spathe, divided into two parts, and containing only a single flower : the perianthium

perianthium is divided into three segments, and stands above the germs: the styles are three; the fruit is a capsule containing a single cell, in which are several seeds.

This genus comprehends the *Vallisneria* and *Vallisneroides* of Michx.

VALLISNERIA.

The root is oblong, white, creeping, and fibrated: the leaves are numerous, very long, narrow, and obtusely pointed; they rise in clusters, eight or ten together from the root: the stalk which supports the flower rises from amidst these; it is naked, slender, very long, and spirally contorted in a beautiful manner like a cork-screw: the flower is single, and its tube very long; it is of a beautiful purple: by the untwisting of the stalk, the flower gets to the top of the water, almost from any depth.

SALIX.

THE male flowers are arranged into an amentum or catkin, and their calyx is the squamma of that amentum; there is no corolla, but there is a nectariferous gland at the base. The calyx of the female flower is also a squamma of the amentum; there is no corolla: the style is bifid: the fruit is a capsule formed of two valves, and containing only one cell, in which there are several seeds furnished with down.

Salix foliis serratis ovatis acutis glabris.

The serrated, oval, and acute-leaved Salix.

**The Bay-leaved
Willow.**

The root is large and spreading; the leaves are the broadest of all the willow-kind; they are two inches long, and near an inch and a half broad, smooth, very like those of the common bay in shape, and serrated at the edges; of a bright strong green on the upper surface, and of a paler colour below: the tree grows to a moderate size: the bark of the trunk is rough, and full of cracks; that of the young shoots is smooth, and of a pale yellowish-green: the flowers hang from the branches, in long, whitish, green catkins.

It is a native of England, but is not frequent. Ray calls it, *Salix folio laureo seu lato glabro odorato*.

The other species of *Salix* are, 1. The common, white-leaved, tree Willow. 2. The red-twigg'd *Salix*, with dark green, not serrated leaves. 3. The long, crenated-leaved, yellow Willow. 4. The almond-leaved, aurited *Salix*. 5. The very long and narrow, whitish-leaved *Salix*. 6. The low, narrow-leaved *Salix*. 7. The oblong, hoary, acute-leaved *Salix*. 8. The brittle-stalked, long-leaved *Salix*. 9. The roundish, silvery-leaved *Salix*. 10. The low, erect, broad-leaved *Salix*. 11. The broad-leaved, dwarf, creeping *Salix*. 12. The round-leaved, dwarf, mountain *Salix*, with the leaves grey underneath. 13. The dwarf, alder-leaved *Salix*. 14. The dwarf *Salix*, with leaves hoary on both sides. 15. The dwarf *Salix*, with leaves smooth on both sides. 16. The dwarf, hoary, flax-leaved *Salix*. 17. The dwarf *Salix*, with short leaves. 18. The narrow and smooth-leaved, dwarf *Salix*. 19. The serpyllum-leaved, glossy, dwarf *Salix*. 20. The roundish-leaved *Salix*, called the common Sallow. 21. The oblong, pointed-leaved Sallow. 22. The very broad-leaved, water Sallow. 23. The sage-leaved, auriculated, Portugal *Salix*. 24. The Babylonian or drooping-branched *Salix*. 25. The common Osier. 26. The long and broad-leaved *Salix*. 27. The long, narrow, deep green-leaved *Salix*. 28. The firm and scarce serrated-leaved *Salix*. 29. The smooth, lanceolated-leaved, serrated *Salix*. 30. The round, silvery-leaved *Salix*.

Class the Twenty-second. Order the Third.

DIOECIA TRIANDRIA.

Plants that have the male and female flowers on separate plants, and have three stamina.

OSYRIS.

THE calyx of the male flower is divided into several segments: there is no corolla. The calyx of the female flower is divided into three segments: there is no corolla, nor any style: the stigma is roundish, and the fruit is a drupe, containing only one cell.

This genus comprehends the *Casia* of Tournefort.

Osyris foliis oblongis acutis.

The oblong, acute-leaved Osyris.

The root is divaricated, tough, and fibrated: the shrub grows to three feet high, and is very ramose: the bark of the trunk is brown; the young shoots are greenish, striated, and tough: the leaves are oblong, narrow, and pointed at the ends; they somewhat resemble those of the *linaria*: the flowers are small, and of a greenish-yellow colour: the fruit is a large, red berry.

It is a native of Italy. C. Bauhine calls it, *Osyris frutescens baccifera*; others, *Casia poetica*.

The other species are, 1. The tall, myrtle-leaved, Spanish *Osyris*. 2. The obtuse-leaved, Siberian *Osyris*.

Class the Twenty-second. Order the Fourth.

DIOECIA TETRANDRIA.

Plants which have the male and female flowers on separate plants, and have four antheræ.

VISCUM.

THE calyx of the male flower is divided into four segments: there is no corolla, nor any stamina: the antheræ are four in number, and grow to the calyx. The calyx of the female flower is composed of four leaves, and is situated above the germen: there is no corolla, nor any style: the fruit is a round berry, containing a single seed, which is of a cordated form.

Of this genus there is but one known species.

VISCUM.

Mistletoe.

The stem is round, robust, half an inch in diameter, and covered with a yellowish bark: the whole plant grows to a foot and a half, or more, in height, and spreads to nearly as much in diameter, usually affecting a roundish form in the whole: the stem divaricates, at a small height from its base, into several branches, and these again into others, very numerous, and, in general, dichotomously: the leaves are oblong, obtuse, thick, and of a yellowish-green colour; they are about an inch and a half in length, and near half an inch in breadth: the flowers are minute and yellowish; the berries large, and full of a viscous juice; they are naturally of a snow-white colour, but sometimes are red.

It grows on the trunks and branches of trees, as the apple, plum, white thorn, &c. in our gardens and hedges. C. Bauhine calls it, *Viscum baccis albis*.

It is esteemed a good medicine in epilepsies and other nervous disorders.

HIPPOPHAE.

THE calyx of the male flower is divided into two parts, and there is no corolla. The calyx of the female flower is also divided into two parts: there is no corolla: the style is simple: the fruit is a berry, containing a single seed.

This genus comprehends the Rhamnoides of Tournefort and others.

Hippophae foliis integerrimis.
The undivided-leaved Hippophae.

Sallow Thorn,
or Sea Buck-thorn.

The root is spreading and fibrated: the shrub rises to ten feet high: the trunk is covered with a brown bark; the branches with a paler, or greenish, one: the leaves are very numerous, oblong, narrow, undivided at the edges, of a dusky green colour on the upper side, and of a silvery white underneath: the flowers are small and greenish; the berries large, round, and yellow.

It is frequent in the Isle of Ely, and on some of the Essex shores. C. Bauhine calls it, *Rhamnus salicis folio angusto, fructu flavescente.*

The other species are, 1. The larger-leaved Hippophae. 2. The serrated-leaved Hippophae.

MYRICA.

THE male flowers are arranged into an amentum: the calyx is a squamma of a lunated figure: there is no corolla. The female flowers are also arranged into an amentum: the calyx is a squamma of a lunated figure: there is no corolla: the styles are two: the fruit is a berry, containing only a single seed.

This genus comprehends the Gale of Tournefort and others.

Myrica foliis lanceolatis, fructu secco.
The lanceolated-leaved Myrica, with a dry fruit.

The root is spreading, brown, and fibrated: the shrub grows to three feet high: the branches are tough, slender, and brown: the leaves are small, lanceolate, and of a dusky green colour: the flowers are of a pale whitish colour.

It is a native of most parts of Europe. Van Royen calls it, *Myrica mas et femina.*

The other species is the Myrica of America, with succulent fruit, or the berry-bearing Myrica.

MORUS.

THE calyx of the male flower is divided into four parts, and there is no corolla. The calyx of the female flower is composed of four leaves: there is no corolla: the styles are two: the calyces become succulent and baccated, and each contains a single seed.

Morus foliis cordatis hispide.
The cordated, hispid-leaved Morus.

The common
Mulberry-tree.

The root is spreading and fibrated: the tree grows to a very considerable size: it's trunk is thick, and usually somewhat tortuous; it's head diffuse, and the branches thick and irregular: the leaves are numerous, moderately large, of a bright green colour, broadest at the base, where they are somewhat cordated, and serrated at the edges; they terminate in a sharp point, and are somewhat hairy: the flowers are small and greenish: the fruit oblong, large, and green at first, afterwards red, but black, when ripe.

It is a native of China, and of some parts of Italy. C. Bauhine calls it, *Morus fructu nigro.*

The other species are, 1. The obliquely-cordated, smooth-leaved Mulberry, with white fruit. 2. The lesser-fruited, smoother-leaved Mulberry; and, 3. The lacinated-leaved Mulberry.

Class

Class the Twenty Second. Order the Fifth.

DIOECIA PENTANDRIA.

Plants with the male and female flowers on separate plants, and with five stamina in the flower.

ANTIDESMA.

THE calyx of the male flower is composed of five leaves: there is no corolla: the antheræ are bifid. The calyx of the female flower is also composed of five leaves: there is no corolla: the stigmata are five: the fruit is a cylindric berry, containing only one seed.

These characters sufficiently distinguish the Antidesma, without a farther description.

PISONIA.

THE calyx of the male flower is formed of a single leaf, divided into five segments: the corolla is of an infundibuliform shape, and is divided also into five segments at the rim. The calyx of the female flower is formed also of a single leaf, divided into five segments, and is situated on the germen: the corolla is of an infundibuliform shape, and divided into five segments: the style is simple: the fruit is a capsule, formed of three valves, containing only one cell, and in it a single seed.

These characters sufficiently also distinguish the Pisonia, without a farther description.

PISTACHIA.

THE male flowers are arranged into an amentum: the calyx is divided into five segments: there is no corolla. The female flowers are distinct: the calyx is divided into three segments: there is no corolla: the styles are three, and the fruit is a drupe, containing a single kernel.

This genus comprehends the Terebinthus and Lentiscus of Tournefort and others.

1. *Pistachia foliis impari-pinnatis, foliolis ovato-lanceolatis.*

The pinnated-leaved Pistachia, with ovato-lanceolate pinnae.

The Tur-
pentine-tree.

The root is brachiated: the tree is an ever-green, and grows to the size of our pear-trees: the bark is brown, thick, and full of cracks: the branches are numerous: the leaves stand alternately, and are pinnated; the pinnae stand opposite, on the rib, and are rigid, firm, of a strong green colour, and not unlike the bay-leaf, but more obtuse: the male flowers are small, and purplish; the female flowers are very small, and greenish: the fruit is roundish, and contains, within a membranaceous shell, a single kernel.

It is a native of Cyprus and Chios, and of some parts of Europe. The Chio Turpentine of the shops flows naturally from it's trunk. C. Bauhine calls it, Terebinthus vulgaris.

2. *Pistachia foliis impari-pinnatis, foliolis subrotundis.*
The pinnated-leaved Pistachia, with roundish pinnae.

The Pistachia-
nut-tree.

The root is spreading: the tree grows to a considerable size: the trunk is thick, and covered with a brown, cracked bark: the branches are numerous and spreading: the leaves are pinnated, and terminated by an odd pinna; the pinnae are large, roundish, nervous, and not placed exactly overagainst one another on the rib: the male flowers are arranged into loose catkins; the female are very small, and are succeeded by the Pistachia-nuts we eat.

It is a native of Persia, Arabia, and Syria. C. Bauhine calls it, *Terebinthus Indica* Theophrasti.

The other species are, 1. The shorter-leaved Turpentine-tree. 2. The small, blue, esculent-fruited Pistachia. 3. The trifoliate Pistachia. 4. The American Turpentine-tree. 5. The Pistachia, called the common Lentisk-tree. 6. The narrow-leaved Lentisk-tree.

CERATONIA.

THE calyx of the male flower is divided into five parts: there is no corolla: the antheræ are didymous. The calyx of the female flower has five tubercles: there is no corolla: the style is single: the fruit is a legumen, or pod, divided by several septa.

This genus comprehends the *Siliqua* of Tournefort and others.

There is but one known species of it.

CERATONIA.

The Carob-tree.

The root is brachiated, spreading, and fibrated: the tree grows to a very considerable size: the trunk is thick; the branches numerous and diffuse: the leaves are very long, and pinnated; the pinnae, or foliola, stand on pedicles, and are two inches and a half long, near as much in breadth, and of a dusky green colour, thick, firm, and venous: the flowers are small and purplish: the fruit is a long, flattened, and crooked pod, containing an esculent pulp round about the seeds.

It is a native of Italy, and of many parts of the East. C. Bauhine calls it, *Siliqua edulis*; others, *Siliqua dulcis*, and *Carob*.

SPINACHIA.

Spinage.

THE calyx of the male flower is divided into five parts: there is no corolla. The calyx of the female flower is divided into four parts: there is no corolla: the styles are four: the seed is single, and is inclosed within the cup, which becomes indurated.

There is but one species of this genus, which is the common Spinach, or Spinage, of our gardens, too well known to need a description. Authors have, however, divided this into two, under the name of male and female, though they have generally called the steril, or male plants, the female, and those which bear seeds the male.

CANNABIS.

THE calyx of the male flower is divided into five parts: there is no corolla. The calyx of the female flower is composed of a single leaf, undivided, and opening sideways: there is no corolla: the styles are two: the fruit is a nut, formed of two valves, and contained within the cup, which shuts upon it.

Cannabis foliis digitatis.

The digitated-leaved Cannabis.

Hemp.

The root is fibrous and white: the plant grows to five or six feet high: the stalk is robust, thick, striated, and composed of tough fibres: the leaves stand on long pedicles, and are composed of five or six parts, or divided to the base into so many segments; these are three inches long, narrow, of a dusky green colour, serrated at the edges, and terminate in a point: the flowers are small and greenish: the fruit is the Hemp-seed we feed birds with.

It is a native of the East Indies, but it thrives very well in fields with us, where it is sown for the sake of its stalks, from which, macerated and loosened into their fibres, Hemp is made. C. Bauhine calls it, *Cannabis erratica* and *fativa*; others, *Cannabis mas et femina*, or *Sterilis et feminifera*.

HUMULUS.

HUMULUS.

THE calyx of the male flower is composed of five leaves: there is no corolla. The calyx of the female flower is composed of a single leaf, obliquely patent and entire: there is no corolla: the styles are two; the seed is single, and is contained within the calyx, which becomes plane.

This genus comprehends the *Lupulus* of Tournefort and others.

There is but one known species of it.

HUMULUS.

The Hop plant.

The root is fibrous: the plant, when properly supported, grows to a great height: the stalk is round, contorted, slender, purplish, and very tough: the leaves stand on pedicles, and are large, palmated, and divided into several segments at the edges; they are of a dark green colour, hispid, rough to the touch, and are often six inches in diameter: the male flowers are collected into loose clusters; the female ones are the Hops we use in brewing.

The plant is common wild in our hedges; but the value of its female flowers dried makes it worth our people's while to cultivate it carefully for them. C. Bauhine calls it, *Lupulus mas et femina*. The young shoots are esculent, and like asparagus.

ZANONIA.

THE calyx of the male flower is composed of three leaves: the corolla is formed of a single petal, and divided into five parts. The calyx of the female flower is also composed of three leaves, and the corolla formed of a single petal, divided into five segments: the styles are three: the fruit is a berry, containing three cells, and placed under the receptacle: there are two seeds in each cell.

Of this genus there is but one known species.

ZANONIA.

The root is fibrous: the plant climbs on any thing that is near it, and runs up to a vast height: the stalk is slender, but woody and firm: the leaves stand alternately, and on pedicles; they are five inches long, and three broad, of a bright green colour, and not divided at the edges; they terminate in a point: the flowers stand in long series, at a distance from one another; they are moderately large, and of a greenish-white colour: the fruit is oblong, broadest at the extremity, considerably large, and red, when ripe.

It is a native of the East Indies. Van Rhede calls it, *Penar-valli*.

Class the Twenty Second. Order the Sixth.

DIOECIA HEXANDRIA.

Plants which have the male and female flowers on separate plants, and six stamina in the male flowers.

GLEDISTIA.

THE male flowers are collected into an amentum, or catkin: the calyx is divided into four parts: the corolla consists of four petals, and the antheræ are incumbent. The female flowers are also arranged in form of an amentum: the calyx is divided into four parts, and the corolla composed of four petals: the fruit is a legumen, or pod, with a pulpy matter in it, separated by partitions.

Of this genus there is but one known species, which is easily distinguished by these characters, without a farther description. Linnæus, in his *Hort. Clusfort.* has called it, *Casalspinoides foliis pinnatis et duplicato-pinnatis*; others, *Acacia abruæ foliis triacanthos, seu triplici spina ad foliorum axillas*.

SMILAX.

SMILAX.

THE calyx of the male flower is composed of six leaves: there is no corolla. The styles are three: the fruit is a berry, containing three cells, in each of which are two seeds.

Smilax caule spinoso, baccis rubentibus.
The red-berried, prickly-stalked Smilax.

**Prickly
Bindweed.**

The root is long, creeping, and white: the plant, if it meets with trees or bushes to climb upon, grows to a great height: the stalk is slender, rigid, striated, and contorted, and is armed all the way with strong and sharp spines: the leaves stand on moderately long pedicles, which are also prickly; they are large, oblong, and prickly, not only at the edges, but often along the ribs underneath: the flowers are small and white; the berries round and red.

It is common in the hedges in Italy, and some parts of France. C. Bauhine calls it, *Smilax aspera fructu rubente*; J. Bauhine, *Smilax aspera*.

The other species are, 1. The less prickly, black-fruited Smilax. 2. The broad-leaved, prickly Smilax. 3. The oblong and oeruous-leaved Smilax.

TAMUS.

THE calyx of the male flower is divided into six parts: there is no corolla. The calyx of the female flower is also divided into six parts, and there is no corolla: the style is trifid: the fruit is a berry, containing three cells, situated below the calyx, and in each cell containing two seeds.

This genus comprehends the *Tamus* of Tournefort, and the *Bryonia nigra* of other authors.

Tamus foliis cordatis.
The cordated-leaved *Tamus*.

**Black
Bryony.**

The root is large and tuberous, often six inches long, and three in diameter, black, on the outside, white within, and full of a viscous, acrid juice: the plant climbs up among bushes to ten or fifteen feet high: its stalk is green, tough, firm, and contorted: the leaves stand alternately; they are four inches long, and more than three broad near the base, whence they go off gradually to an obtuse point, resembling in the whole the shape of a heart, as usually figured; they are of a shining strong green colour, and perfectly smooth: the flowers are small and greenish; the fruit a black berry.

The plant is common in our hedges. C. Bauhine calls it, *Bryonia nigra racemosa*.

The other species are, 1. The larger-flowered *Tamus*. 2. The American *Tamus*, with palmated leaves.

RAIANA.

THE calyx of the male flower is divided into six segments: there is no corolla: the calyx of the female flower is divided also into six segments: there is no corolla: the styles are three: the fruit is roundish, and has an oblique ala below the calyx.

This genus comprehends the *Jan Raia* of Plumier, and is sufficiently distinguished by these characters, without a farther description.

DIOSCOREA.

THE calyx of the male flower is divided into six segments: there is no corolla: The calyx of the female flower is also divided into six segments, and there is no corolla: the styles are three: the fruit is a compressed capsule, divided into three cells, in each of which there are two membranaceous seeds.

Dioscorea foliis cordatis alternis, caule laevi.

The smooth-stalked Dioscorea, with cordated, alternate leaves.

The root is tuberous, very large, divided into several parts, of a farinaceous substance, and esculent: the stalk is woody, slender, weak, and supports itself by climbing upon any thing that is near it: the leaves stand singly at the joints; they are oblong, obtuse at the point, cordated at the base, of a dusky green, and nervous: the flowers are small and greenish; the fruit is a flattened capsule.

It is a native of Jamaica and other parts of America. Plumier calls it, *Dioscorea scandens folio tamni, fructu racemoso.*

Class the Twenty Second. Order the Seventh.

DIOECIA OCTANDRIA.

Plants which have the male and female flowers on separate plants, and eight stamina in the male flower.

POPULUS.

THE male flowers are arranged into an amentum; the calyx is a lacerated lamina: the corolla is of a turbinated figure, oblique and undivided. The female flowers are arranged in an amentum, in the manner of the male ones, and the calyx and corolla are of the same structure; the stigma is divided into four parts, and the fruit is a capsule, containing four cells, in each of which are several pappose seeds.

Populus foliis subrotundis, dentato-angulatis, subtus tomentosis.

The Populus, with roundish, angulated leaves, woolly underneath.

The white Poplar.

The root is spreading; the tree grows to a great height: its trunk is thick, tolerably erect, and covered with a smooth, pale, whitish bark: the branches are not very numerous; the leaves are three inches long, and near as much in diameter; they are deeply dentated or angulated at the edges, and are of a dark green on the upper surface, and white and woolly underneath: the flowers are small, and stand in long, loose catkins: the fruit is a small capsule.

It is common about watery places in most parts of Europe. C. Bauhine calls it, *Populus alba.*

The other species are, 1. The black Poplar. 2. The trembling-leaved Poplar, or Aspin. The smaller-leaved white Poplar, and the American, great-leaved Poplar, are only varieties of the first species.

Class the Twenty Second. Order the Eighth.

DIOECIA ENNEANDRIA.

Plants which have the male and female flowers on separate plants, and nine stamina in the male flower.

MERCURIALIS.

THE calyx of the male flower is divided into three parts; there is no corolla: the stamina are from nine to twelve: the anthers are globose and didymous. In the female flower, the calyx is also divided into three parts, and there is no corolla: the styles are two; the fruit is a dioecious capsule, having two cells, and in each one seed.

*Mercurialis caule brachiato, foliis glabris.**The Mercurialis, with a brachiated stalk, and smooth leaves.*

The root is fibrous and white: the plant rises to ten inches high: the stalk is thick, round, green, and jointed: the branches are numerous; the leaves are oblong, of a bright green, serrated, and terminate in a point: the male flowers are arranged in lax spikes: the female ones are succeeded singly by a testiculated fruit.

It is common in many parts of England in dry places. C. Bauhine and others call it, *Mercurialis mas et foemina*.

The other species are, 1. The common dog's Mercury, called *Cynocerambe*. 2. The hoary-leaved, shrubby *Mercurialis*. 3. The almond-leaved, shrubby *Mercurialis*. 4. The roundish-leaved *Mercurialis*.

HYDROCHARIS.

THE male flower has a spathe composed of two leaves: the calyx is divided into three parts: the corolla consists of three petals, and the three interior stamina are styliiferous. The calyx of the female flower is divided into three parts, and the corolla consists of three petals: the styles are six: the capsule contains six cells, and in each of them a number of seeds; its situation is under the receptacle of the corolla.

This genus comprehends the *Stratiotes* of Dillenius, the *Morlus* range of Tournefort, and the *Microleuco-nymphaea* of Boerhaave. There is but one species of it.

HYDROCHARIS.

Little Water-Lily.

The root is composed of a number of brown, thick, and long filaments: the leaves float on the surface of the water, and are of a round figure, thick, fleshy, and of a dusky brownish-green colour; they are about an inch and a half broad: the flowers stand singly on their pedicles, and are moderately large and white.

It is common in ditches. C. Bauhine calls it, *Nymphaea alba minima*.

Class the Twenty Second. Order the Ninth.

DIOECIA DECANDRIA.

Plants which have the male and female flowers on separate plants, and ten stamina in the male flower.

CORIARIA.

THE calyx of the male flower is composed of five leaves: the corolla consists of five petals, and is very like the cup: the antheræ are bipartite. In the female flower, the calyx is composed of five leaves: the corolla is like that of the male flower; the styles are five: the fruit consists of five seeds, included in the petals, which become succulento-baccated.

*Coriaria foliis ovato-oblongis.**The ovato-oblong-leaved Coriaria.**Myrtle Sumach.*

The root is divided, spreading, and fibrated: the shrub grows to four or five feet high: the trunk is half an inch in diameter, hollow, brittle, and filled with a light pith: the bark is greyish and spotted; the young shoots are square: the leaves stand in pairs; they are oblong, and of a bright green: the flowers are small and green; the antheræ blackish: the fruit is of the bignonia of a pear.

It is a native of France. C. Bauhine calls it, *Rhus myrtifolia Monspeliensis*. It is said to be a very great medicine in epilepsies. Its bark contains its greatest virtue.

NYSSA.

THE calyx of the male flower is divided into five segments; the corolla is also divided into five segments. The calyx and corolla in the female flower are also each divided into five segments: the style is single; the fruit is a drupe, containing only one cell, and is placed under the receptacle.

It is a native of Virginia. These characters sufficiently distinguish it, without a farther description.

CARICA.

THE male flower has scarce any calyx; the corolla is formed of a single petal, and is of an infundibuliform shape, and divided into five segments at the edge: the filaments or stamina are situated within the tube of the corolla, and are alternately shorter. The calyx of the female flower has five indentings; the corolla consists of five petals: the stigmata are five; the fruit is a berry, containing only one cell, in which are several seeds.

This genus comprehends the Papaya of Tournefort. There is but one species of it.

CARICA.

The Papaw-tree.

The root is spreading; the tree, if it may be so called, grows to thirty feet, or more, in height; its trunk is green, thick, naked, tender, and succulent, and, though often of the thickness of a man's thigh, may be cut down with a knife at one stroke: the leaves stand on long pedicles at the top, forming a very beautiful head; they are two feet, or more, in breadth, and are deeply divided into five or seven segments, so as to appear digitated: they are of a deep green on the upper surface, and of a paler green underneath; the flowers are yellow, moderately large, and hang in clusters: the fruit is large, and, when ripe, yellow.

It is a native of America. C. Bauhine calls it, Papaya.

The male and female flowers in this sometimes grow on the same plant, not on different ones, as is the usual custom; an instance of this we had in Lord Petre's stove.

KIGELLARIA.

THE calyx of the male flower is divided into five segments: the corolla consists of five petals; there are five trilobous glandules: the antheræ are perforated. The calyx and corolla in the female flower are the same with those of the male: the styles are five: the fruit is a capsule formed of five valves, containing only one cell, and in it several seeds.

These characters sufficiently distinguish the Kigellaria, without any farther description.

DATISCA.

THE calyx of the male flower is composed of five leaves; there is no corolla: the antheræ are long and sessile. The calyx of the female flower is composed of five leaves; there is no corolla: the styles are three: the fruit is a triangular, tri-cuspidated capsule, containing only one cell, but in that a number of seeds, and it is perrivous.

These characters sufficiently distinguish the Datisca, without a farther description.

Class the Twenty Second. Order the Tenth.

DIOECIA ICOSANDRIA.

ARUNCUS.

THE calyx of the male flower is divided into five segments at the extremity: the corolla is composed of five petals, and inserted into the calyx. The calyx of the female flower is divided into five segments: the corolla is composed of five petals: the germina are three, and the seeds three.

This genus comprehends the *Barba capræ* of Tournefort. There is but one known species of it.

ARUNCUS.

The root is oblong, thick, brown, and woody: the plant grows to four or five feet high: the stalks are striated, hollow, and smooth: the leaves are oblong, serrated at the edges, pointed at the end, and somewhat resemble those of the chestnut, and are placed several on the same rib: the flowers are small and white, and hang in long, slender spikes.

It is a native of many parts of Europe, but we have it not wild in England. C. Bauhine calls it, *Barba capræ*.

Class the Twenty Second. Order the Eleventh.

DIOECIA POLYANDRIA.

CLIFFORTIA.

THE calyx of the male flower is composed of three leaves; there is no corolla: the stamina are about thirty. The calyx of the male flower is composed of three leaves, and is situated upon the germin; there is no corolla: the styles are two; the fruit is a capsule, containing two cells, and in each a single seed.

These characters sufficiently distinguish the *Cliffortia*, without a farther description.

Class the Twenty Second. Order the Twelfth.

DIOECIA MONADELPHIA.

JUNIPERUS.

THE male flowers are arranged into an amentum, and it's squammæ make the calyces; there is no corolla: the stamina are three. The calyx of the female flower is divided into three parts; the corolla is composed of three petals; the styles are three: the fruit is a berry, containing three seeds.

This genus comprehends the *Juniperus* and *Cedrus* of Tournefort, and the *Sahina* of Boerhaave.

Juniperus foliis basi adnatis, junioribus imbricatis, senioribus patulis.

The Juniperus, with the young leaves imbricated, the elder patulous.

**Bermudas
Cedar.**

The root is spreading; the tree grows to a considerable size in some places, though in others it is only a shrub: the leaves are small, short, of a lively green, and very numerous: those on the young shoots lie close and imbricated, those on the older stand open; this gives the appearance of two perfectly different kinds of leaves on the same plant: the fruit is a small, bluish-black berry, like that of our Juniper.

It is a native of most parts of America. Ray calls it, *Juniperus major Americana*.

The

The other species are, 1. The common Juniper. 2. The broader-leaved, mountain Juniper, with oblong berries. 3. The great, blue-berried Juniper. 4. The great, red-berried, short-leaved Juniper. 5. The great, yellow-berried, cypress-leaved Juniper. 6. The great-berried, cypress-leaved Juniper. 7. The tall, Spanish Juniper, with large, black fruit. 8. The common Savin.

T A X U S.

THE calyx of the male flowers is composed of three leaves; there is no corolla: the stamina are numerous; the antheræ are peltate, and divided into eight segments. The calyx of the female flower is composed of three leaves, and there is no corolla; there is no style: the seed is single, and is surrounded by an undivided, baccated calyx.

Of this genus there is but one known species.

T A X U S.

The Yew-tree.

The root is brachiated and spreading; the tree grows to thirty feet, or more, in height: the trunk is usually tortuous and irregular; the branches are numerous and spreading: the bark is of a pale reddish-brown; the wood firm, and of a beautiful reddish colour: the leaves are long, narrow, and arranged closely in form of pinæ; the flowers are inconsiderable and yellowish; the fruit is a large, green seed, surrounded by a fine bright red calyx, succulent, and of the nature of a berry.

The yew is a native of most parts of Europe. C. Bauhine calls it, *Taxus vulgaris*.

E P H E D R A.

THE calyx of the amentum is divided into two parts; there is no corolla: the stamina are seven: four of the antheræ are inferior. The calyx of the female flower is quintuple, and divided into two parts; there is no corolla: the pistils are two; the seeds are two, and are covered by a baccated calyx.

Ephedra caule nudo fruticosa, floribus confertis.

The naked, shrubby Ephedra, with clustered flowers.

**The great
Sea Grape.**

The root is divaricated and spreading: the shrub grows to four, five, or six feet high; the stem is an inch or two in diameter; the branches are numerous, and the bark of a dusky blackish colour: the shoots that produce the flowers are a foot long, slender, and scarce support themselves erect: they are naked, or wholly without leaves, as is also the whole plant; but they are frequently jointed, and at the joints stand the flowers in clusters; they are small and mossy: the fruit is red, succulent, and of an acid and austere taste.

It is a native of the coasts of Italy and Sicily. C. Bauhine calls it, *Polygonum bacciferum maritimum majus*.

The other species are, 1. The lesser Sea-grape, or shrub Horse-tail; and, 2. The climbing, bacciferous Ephedra, or climbing Sea Horse-tail.

Class the Twenty Second. Order the Thirteenth.

DIOECIA SYNGENESIA.

R U S C U S.

THE calyx of the male flower is composed of six leaves; there is no corolla: the nectarium is situated in the center, and is of an oval figure, and perforated at the top. The calyx, corolla, and nectarium are in the female flowers exactly as in the male; the style is single: the fruit is a berry, containing three cells; the seeds are two.

Ruscus foliis supine floriferis nudis.

The Ruscus, with naked leaves flowering on the upper part.

**Butcher's
Broom.**

The root is creeping, white, and tender: the plant grows to two feet high; the stalk is tough, woody, firm, striated, and ramose; the leaves are of an oblong shape, and pointed at the extremity so sharply, as to prick the fingers; they are about half an inch long, and of a deep green colour: the flowers stand on the middle of the leaves, and are small and greenish; the berry is large and red.

It is common in our woods and on heaths. C. Bauhine calls it, *Ruscus*; others, *Ruscus vulgaris*.

The other species are, 1. The *Ruscus*, called the Alexandrian laurel, with the fruit on the leaf. 2. The *Uvularia* of the shops, or *Hippoglossum*, with a little leaf on the larger. 3. The narrow-leaved *Ruscus*, with the berries on the tops of the stalks.

Class the Twenty Second. Order the Fourteenth.

DIOECIA. GYNANDRIA.

CLUTIA.

THE calyx of the male flower is composed of five leaves; the corolla is formed of five petals. The calyx of the female flower is composed of five leaves, and the corolla of five petals: the styles are three; the capsule contains three cells, and in each a single seed.

Of this genus there is but one known species.

CLUTIA.

The root is brachiated and spreading: the shrub rises to eight feet high; the stem or trunk is covered with a brown, unequal bark: the branches are numerous and slender; the leaves are of an oblong figure, obtuse, and about an inch in length, fleshy, and of a dusky green: the flowers are small, and of a greenish white.

It is a native of Ethiopia.

Class the Twenty Third.

POLYGAMIA.

Plants which have hermaphrodite flowers, and others which are either simply male, or simply female.

OF these some have the separate flowers on different parts of the same plant; others have them on two different plants, and others have the three kinds, and those on three different plants, all of the same species.

The Polygamia may hence be conveniently arranged into three orders, according to these distinctions.

Class the Twenty Third. Order the First.

POLYGAMIA MONOECIA.

Plants which have separate hermaphrodite flowers, and either male or female ones, or different hermaphrodite ones, on the different parts of the same plant.

MUSA.

IN the male hermaphrodite flower, the calyx is a spatha: the corolla consists of two petals, one of which is erect, and divided by five indentings at the edge, and the other

other is hollow, shorter, and nectariferous: the stamina are six; five of them are fertile, or have antheræ on them: the style is single: the germen under the flower is abortive, or produces no fruit. In the female hermaphrodite flowers, the calyx, the corolla, the stamina, and the pistil are the same in number, figure, and situation as in the others; but, of the six stamina, only one is fertile, or produces an anthera: these flowers are succeeded by the fruit, which is an oblong, triquetrous berry.

Musa racemo simplicissimo.
The simple-clustered Musa.

The Plantain-tree.

The root is oblong and thick, blackish on the outside, white within, and fibrated: the plant grows to six, eight, or more feet in height, and has the appearance of a tree: the stem is as thick as a man's leg, but it is tender, and may be cut through with one stroke of a knife; it is green, and seems composed of several series of leaves, rolled over one another: the leaves grow from the top; they are eight or ten in number; these are each six or seven feet long, about a foot and a half broad, of a fine green colour, and of a firm and somewhat harsh texture, easily splitting, and cracking transversely on each side to the middle rib: from the center of these leaves rise the pedicles of the flowers; they are oblong, thick, and robust, and at their tops stand, at first, a large, oblong body, formed of a series of broad and short leaves; these daily expand, and then curl up, and, at length, shew the flowers they had inclosed, which are in each seven or eight in number, large, oblong, and of a whitish-yellow colour: the fruit is large, and of the size of a cucumber: there are a great many of these on the same pedicle, placed in several clusters round it, at small distances; they are of an oblong and triquetrous form: there are from ten to twenty of these fruits usually on the whole pedicle, which lengthens and increases every way, as they appear successively upon it: the fruit is eculent.

It is a native of the East Indies. Clusius calls it, Musa; C. Bauhine, Palma humilis longis latisque foliis, and Ficus Indica fructu racemoso, folio oblongo.

The other species are, 1. The cluster-fruited, racemous Musa. 2. The smaller-fruited Musa.

OPHIOXYLON.

IN the hermaphrodite flower, the calyx is divided into five segments: the corolla is also divided into five segments, and is of an infundibuliform shape: the stamina are five: the pistil is single. In the male flowers, the calyx is divided into two parts: the corolla is of an infundibuliform shape, and divided into five segments at the mouth: the nectarium is of a cylindric form: the stamina are only two.

These characters sufficiently distinguish the Ophioxylon, without a farther description:

VERATRUM.

THE hermaphrodite flowers have no calyx: the corolla is formed of six petals: the stamina are six: the pistils are three, and the fruit is composed of three capsules, each containing a great number of seeds. The male flowers have no calyx: the corolla is divided into six parts: the stamina are six in number, and there appears a rudiment of a pistil.

Veratrum foliis latioribus.
Broad-leaved Veratrum.

White
Hellebore.

The root is composed of a cluster of thick, whitish fibres: the plant rises to three feet high: the stalk is round and robust: the leaves are numerous; they surround the stalk at the base, and are ten inches long, and eight broad, nervous, somewhat hairy, and soft to the touch: the flowers are small, and of a greenish-white colour; they stand in clusters, and form a kind of spike from the middle to the top of the plant.

It is a native of Germany, and many other parts of Europe. C. Bauhine calls it, Helleborus albus flore subviridi.

It's root dried is the white Hellebore of the shops, a powerful sternutatory.

There is but one other known species, which is the early-flowering, narrow-leaved, purple Veratrum.

C E L T I S.

THE calyx of the hermaphrodite flower is divided into five segments: there is no corolla: the stamina are five: the styles are two: the fruit is a drupe, containing a single kernel. The calyx of the male flower is divided into six parts: there is no corolla, and but one stamen.

Celtis foliis majoribus serratis.
The larger, serrated-leaved Celtis.

The Net-
tle-tree.

The root is brachiated: the tree grows to a considerable size: the trunk is thick: the branches numerous and diffuse: the bark is of a greyish colour: the leaves are three or four inches long, and three fourths of their length in breadth near the base; they are somewhat like those of the common stinging Nettle; they are deeply serrated, and terminate in a long, narrow point: the flowers are small: the fruit is black, and of the bigness of a Cherry.

It is a native of Italy. C. Bauhine calls it, Lotus fructu cerasi.

The other species are, 1. The Virginian, red-fruited Lotus. 2. The citron-leaved, American Lotus.

H O L C U S.

THE calyx of the hermaphrodite flower is a glume, containing two flowers: the corolla is a glume, furnished with a triple arista, or awn: the stamina are three; the styles are two; the seed is single. The calyx of the male flower is a bivalve glume: there is no corolla: the stamina are six.

These characters sufficiently distinguish the Holcus from all the grass kind without a farther description.

This genus comprehends the Sorghom of Micheli.

Æ G I L O P S.

THE calyx of the hermaphrodite flower is a glume, containing three flowers: the corolla is a glume, terminated by a simple arista, or awn: the stamina are three; the styles are two; and the seed is single. The calyx of the male flowers is a glume, containing three flowers: the corolla is an aristated glume: the stamina are three.

Ægilops spica ovata, aristis brevior.
The Ægilops, with an oval spike shorter than the arista.

The root is composed of a few short, white fibres: the plant grows to about a foot high: the stalk is round, hollow, jointed, and has two or three long, narrow, grassy leaves on it, hairy at the edges: at the top of the stalk stands a short spike, composed of two or three little rigid clusters of flowers: the seeds are large, and somewhat like barley, but flatter: the arista are long, white, and acute.

It is a native of Italy, and some other parts of Europe. C. Bauhine calls it, Festuca altera capitulis duris; others, Ægilops.

The spike is sometimes longer than usual, so which state Tournefort has mentioned it as another species, under the name of Gramen spicatum durioribus locustis spica longissima.

G E N C H R U S.

THE involucrem is lacinated, echinated, and contains two flowers: the calyx is a glume, containing two flowers, the one of them male, the other hermaphrodite: the corolla of the hermaphrodite flower is a mucous glume: the stamina are three: the style is divided into two parts, and the seed is single. In the male flower, the corolla is also a glume, without any awn: the stamina are three.

This genus comprehends the Panicatella of Micheli.

Cenchrus

Cenchrus panicula spicata.
The spiked-panicled Cenchrus.

Rough-tared, sea
Dog's-grass.

The root is composed of a great number of white fibres: the plant rises to about six inches high: the stalks are numerous, hard, rigid, reddish, and full of knots, or joints: the leaves are numerous and short; they cover the stalk, in great part, by surrounding it at their bases; they are hairy at the edges, and of a bluish-green colour: the flowers form a kind of spike, of about an inch long, and mucicated.

It is common about the sea-coasts, in many parts of Europe. C. Bauhine calls it, *Gramen caninum maritimum spica echinata*; but it is often found far from the sea.

The other species are, 1. The long, purple-spiked, American Cenchrus. 2. The white-spiked, American Cenchrus. 3. The broader-leaved Cenchrus. 4. The tall, narrow-leaved Cenchrus.

VALANTIA.

IN the hermaphrodite flower, there is no calyx: the corolla is divided into four parts: the stamina are four: the style is bifid, and the seed is single. In the male flower, there is no calyx: the corolla is divided into three or four segments: the stamina are either three or four: the pistil is obsolete.

This genus comprehends the *Cruciata* of authors.

Valantia floribus masculis quadrifidis, pedunculis diphyllis. **Crucis-**
The *Valantia*, with quadrifid male flowers, and diphyllous peduncles. **Woit.**

The root is composed of a cluster of yellow fibres: the stalks are numerous, a foot long, and hairy, square, infirm, and often in part procumbent: the leaves stand four at every joint; they are broad, short, obtuse, hairy, and disposed in a radiated manner: the flowers are small and yellow, and stand in the ale of the leaves.

It is common under hedges, in many parts of England. C. Bauhine calls it, *Cruciata hirsuta*; others, *Cruciata*.

The other species are, 1. The four-leaved, echinated, fixatile *Valantia*. 2. The narrow and smooth-leaved *Valantia*. 3. The small, broad-leaved, smooth, Alpine *Valantia*. 4. The paniculated-flowered *Valantia*. 5. The smooth, fine-leaved *Valantia*. 6. The hairy, round-leaved, Pyrenean *Valantia*. 7. The broad-leaved, smooth, white-flowered *Valantia*. 8. The narrower-leaved, white-flowered *Valantia*. 9. The little, procumbent, wall *Valantia*. 10. The rough-fruited *Aparine* of authors. 11. The smooth, broad-leaved, oriental *Valantia*.

PARIETARIA.

THE calyx of the hermaphrodite flower is divided into four segments: there is no corolla: the stamina are four: the style is single; the seed is single, and is contained in the calyx, which becomes elongated for it's reception. The calyx of the female flower is divided into four segments: there is no corolla: there are no stamina: the style is single, and the seed is single, and is contained in the same manner in the elongated cup.

Parietaria foliis lanceolato-ovatis alternis. **Pellitory of**
The *Parietaria*, with lanceolato-ovate, alternate leaves. **the Wall.**

The root is composed of a multitude of fibres, of a reddish colour: the stalks are numerous, round, hairy, brownish, brittle, and not very thick; they grow to a foot, or more, in length: the leaves are oblong, broadest in the middle, and pointed at the ends, of a dusky green colour, and somewhat hairy: the flowers are small and greenish; they stand in clusters, at the ale of the leaves.

It is common on old walls. C. Bauhine calls it, *Parietaria officinarum et Diofcoridis*.

The other species are, 1. The basil-leaved *Parietaria*. 2. The dwarf, Portugal *Parietaria*.

ATRIPLEX.

THE calyx of the hermaphrodite flower is formed of five leaves: there is no corolla: the stamina are five: the style is divided into two parts: the seed is single and depressed. The calyx of the female flower is composed of two leaves: there is no corolla; there are no stamina: the style is divided into two parts: the seed is single and compressed.

Atriplex valvulis *fœmineis seminum disco dentatis.* Long-leaved
The Atriplex, with the female valves of the seeds den- Wild Orach.
tated at the disk.

The root is oblong, slender, and white: the stalk is round, striated, green, and two feet high: the leaves stand alternately on it; they are three inches long, three quarters of an inch broad, and of a pale green colour, not serrated at the edges, but sometimes fagittated at the base: the flowers are of a greenish-white colour; they stand in long clusters, at the tops of the branches.

It is common by way-sides. C. Bauhine calls it, *Atriplex angusta oblongo folio.*

Its leaves vary greatly in form. Sometimes they are not fagittated at all at the base; sometimes they are very much so; sometimes they are very narrow, and at others broader, and sometimes lanceolate, and not very long: all these varieties will sometimes take place, in some degree, on the same plant.

The other species of *Atriplex* are, 1. The garden *Atriplex*, distinguished into the white and red kind by authors, as if of two species. 2. The broad-leaved, shrubby, sea *Atriplex*. 3. The procumbent, Spanish, shrubby, sea *Atriplex*. 4. The silvery, polygonum-leaved, sea *Atriplex*. 5. The very narrow-leaved sea *Atriplex*. 6. The lacinated-leaved, sea *Atriplex*. 7. The narrow-leaved, dentated, sea *Atriplex*. 8. The halimus-leaved, herbaceous, sea *Atriplex*. 9. The deltoide-leaved, perennial, sea *Atriplex*. 10. The oblong, narrow-leaved, sea *Atriplex*. 11. The very narrow and very long-leaved *Atriplex*.

Class the Twenty Third. Order the Second.

POLYGAMIA DIOECIA.

Plants which have flowers of different structure, hermaphrodites and others, on different plants of the same species.

CHAMÆROPS.

THE calyx of the hermaphrodite flower is divided into three parts: the corolla is also divided into three parts: the stamina are six: the germina are three: the fruit is composed of three drupes, each of which contains a single kernel. The calyx of the male flower is divided into three parts: the corolla is divided also into three parts: the stamina are six, and cohere together.

These characters sufficiently distinguish the *Chamærops*, without a farther description: Pontedera gives it the name of *Chamæriphe*, 10.

FRAXINUS.

IN the hermaphrodite flower, there is, in some species, no calyx; in others there is a small one, divided into four parts: in some species there is no corolla, in others there is a small one, formed of four petals: the stamina are two; the pistil is single, and the seed single. In the female flower, the pistil is single, and the seed is single, and, as in the other, of a lanceolated figure.

Fraxinus



Wallisneria

Valantia


 A small, stylized illustration of a person standing next to a large, ornate structure, possibly a monument or a piece of machinery.

பெரியகோயிலுக்கு

與

Garnier

Lamprolaima

Erasmus

Gubins

Myra

1999



Artemisia

Compositum





Fraxinus floribus nudis.
The naked-flowered Fraxinus.

The common
Ash-tree.

The root is brachiated and spreading: the tree grows to a very considerable height and size: the bark of the branches is of a pale bluish-green colour: the leaves are large and pinnated; the pinnæ are of an oblong figure, and serrated: the flowers are small and inconsiderable: the fruit is what we call the Ashen-key; great clusters of them are affixed to the same common pedicle.

It is common in our woods and hedges. C. Bauhine calls it, *Fraxinus excelsior*; others, *Fraxinus vulgaris*.

The other species are, 1. The complete-flowered Fraxinus, called the manna Ash.
2. The rounder-leaved Fraxinus. 3. The narrower-leaved, American Fraxinus.

RHODIOLA.

THE calyx of the hermaphrodite flower is divided into four parts: the corolla consists of four petals: the nectarium consists also of four petals: the stamina are eight; the pistils are four, and abortient. The calyx of the female flower is divided into eight parts: there is no corolla: the nectarium is composed of four petals: the pistils are four: the capsules are also four, and each of them contains a number of seeds.

These characters sufficiently distinguish the Rhodiola, without a farther description.

ANTHOSPERMUM.

THE calyx of the androgynous flower is divided into four segments: there is no corolla; the stamina are four; the pistils are two, and the germen stands below the flower. The male flowers are the same with these, but that they want the pistils and germen. The female flowers have the pistils and germen, but they want the stamina. These several flowers are sometimes situated on the same plant, but more frequently on different ones of the same species.

These characters sufficiently distinguish the Anthospermum, without a farther description. Pontedera gives this genus the name of *Tournefortia*.

ARETOPUS.

THE umbel of the male plant is composite: the involucre consist of five leaves; the corolla of five petals: the stamina are five; the pistils are two, and abortient. The umbel of the androgynous plant is simple: the involucre is divided into four parts, and is very large, prickly, and contains a number of male flowers in the disk, and four female ones in the radius. The male flowers have five petals and five stamina: the female flowers have five petals and two styles: the fruit is single and bilocular, and stands under the receptacle of the floccule.

This genus comprehends the *Valerianoides* of Plukenet. It is sufficiently distinguished by these characters, without a farther description.

Class

Class the Twenty Third. Order the Third.

POLGAMIA TRIOECIA.

Plants which have distinct male, female, and hermaphrodite flowers, on as many separate plants of the same species.

EMPETRUM.

THE calyx of the hermaphrodite flower is divided into three parts: the corolla consists of three petals: the stamina are three, and very long: the stigmata are nine: the fruit is a berry, containing nine seeds. The calyx of the male flower is divided into three parts: the corolla is composed of three petals: the stamina are nine, and very long. The calyx of the female flower is divided into three parts: the corolla is composed of three petals: the stigmata are nine, and the fruit is a berry with nine seeds.

Empetrum procumbens foliis longioribus. **Berry-bearing Heath,**
The procumbent Empetrum, with long leaves. **or Crake Berries.**

The root is oblong and spreading: the shrub is small, and in great part procumbent: the branches are woody, tough, and reddish: the leaves are numerous and small, narrow, firm, and of a deep green colour, and placed in a ternate, or quaternate, order: the flowers are small: the fruit is a round, black berry.

It is a native of most of the mountainous parts of Europe; we have it on the hills in Lancashire and Westmoreland. C. Bauhine calls it, *Erica baccifera procumbens nigra*.

There is but one other known species of this genus; this is the white-berried, erect *Empetrum*.



Some

Some Genera, the Characters of which are not yet so perfectly known or ascertained as were to be wished.

P H O E N I X.

THE male and female flowers are on distinct plants, or on the same spadix. In the male flowers, the general spatha is composite: the spadix is ramose: the corolla is deeply divided into three hollow, oval segments: the stamina are three slender filaments: the antheræ are short. In the female flowers, the calyx is the same as in the male: the corolla is divided into three principal segments, with as many very small lacinie, externally and internally: the germen is roundish; the style is subulated and short; the stigma is acute: the fruit is an oval berry, having only one cell, and in that a single, oleous seed, of a suboval figure, with a longitudinal furrow.

Phoenix frondibus pinnatis, foliis alternis ensiformibus, basi complanatis, petiolis compressis dorso rotundatis.

The pinnated-leaved Phoenix, with alternate, ensiform foliola, complanated at the base, and their pedicles compressed, and rounded at the back.

**The great Palm,
or Date-tree.**

The root consists of a long and thick body, penetrating deep into the earth, and of a multitude of ramifications, running just under the surface: the trunk is strait, simple, and undivided: the tree grows to a considerable height: the leaves all grow in a kind of closter at the top; they are from sixty to eighty in number, and are beautifully disposed in a circular manner; in the midst there stands a conic body, formed of a cluster of yet unexpanded leaves; around this stand numbers of leaves, not yet perfectly separated; below these, others more perfectly disengaged, and so on to the lowest; the whole head, formed by all these, is very large and very beautiful, the lowest of them standing not parallel, but making a kind of arch with their pedicles; they are very large, and pinnated; the pinnae are very long, narrow, and of a deep green colour, resembling in figure the leaves of reeds; and the rib appears spinose, but the spines are no other than the rudiments of leaves: the male spadix is large, ramose, and contains a vast number of flowers; they are small, and of a yellowish-white colour: the female flowers are small, and also very numerous; they are succeeded by the fruit, which is the Date of the shops.

It is a native of both the East and West Indies. C. Bauhine calls it, Palma major; others, Palma dactylifera major.

C O R Y P H A.

THE general spatha is composite: the spadix is ramose: the corolla is divided into three oval, obtuse, patent segments: the stamina are six subulated filaments, longer than the corolla: the antheræ are adnate: the germen is roundish: the style is subulated and short: the stigma is simple: the fruit is a large, globose, unilocular berry: the seed is single, oleous, large, and globose.

The Codda Panni of the Hortus Malabaricus is of this genus.

C O C C U S.

THERE are male, hermaphrodite flowers, and female ones, distinct on the several parts of the same spadix: the general spatha is composite, and the spadix ramose. In the hermaphrodite flowers, the corolla is divided into three oval, acute segments: the stamina are six simple filaments, of the length of the corolla: the antheræ are oblong and incumbent: the germen is scarce visible: the style is short, thick, and

obtusely triſid: the ſtigma is obſolete, and the rudiment of the fruit is abortient. The female flower has the corolla very minute, but divided alſo into three ſegments: the germen is oval, and terminated in a ſubulated ſtyle: the ſtigma is tripartite: the fruit is large, coriaceous, round, and obtuſely trigonal: the ſeed is a large nut, of an oval figure, acuminate, formed of three valves, obtuſely trigonal, and marked with three holes at the baſe.

This genus comprehends the *Tenga* of the *Hortus Malabaricus*.

BORASSUS.

THE male and female flowers are on diſtinct plants. The male flowers have the general ſpatha compound: the ſpadiſh is amentaceous and imbricated: the corolla is divided into three oval, hollow ſegments, reſembling petals: the ſtamina are fix thick filaments: the antheræ are thick and ſtriated. The female flowers have the ſpatha and ſpadiſh like the male: the corolla is divided into three round, ſmall, permanent ſegments: the germen is roundiſh: the ſtyle is three, and ſhallow: the ſtigmata are ſimple: the fruit is a roundiſh, obtuſe, rigid, unilocular berry: the ſeeds are three, oval, compreſſed, diſtinct, and filamentoſe.

This genus comprehends the *Ampa* and *Carimpana* of the *Hortus Malabaricus*: the *Ampa* is the male, the *Carimpana* the female.

CARYOTA.

THE male and female flowers are produced in ſeparate parts of the ſame ſpadiſh. The general ſpatha is compound: the ſpadiſh is ramole: the corolla is divided into three hollow, lanceolated ſegments: the ſtamina are numerous filaments, longer than the corolla: the antheræ are linear. The corolla in the female flower is divided into two very ſmall, acuminate ſegments: the germen is roundiſh: the ſtyle is acuminate: the ſtigma is ſimple: the fruit is a round berry, containing a ſingle cell: the ſeeds are two, large, oblong, rounded on one ſide, and flattened on the other.

BEGONIA.

THERE are diſtinct male and hermaphrodite flowers on the ſame plant. The male flower has no calyx: the corolla is formed of four petals, patent and regular, two of the petals are placed oppoſite, and are lanceolated; the other two are oval, emarginated, and broader: the ſtamina are numerous capillary filaments, ſhorter than the corolla: the antheræ are roundiſh: the piſtil is deciduous. The hermaphrodite flower has no calyx; the germen answers the purpoſe of one: the corolla is compoſed of five oblong, patent, and cordated petals: the ſtamina are numerous capillary filaments, ſhorter than the corolla: the antheræ are roundiſh: the germen is triangular, with membranaceous angles, and is three-pointed and erect: the ſtyle is three, biſid, and of the length of the ſtamina: the ſtigmata are globoſe: the fruit is triangular, and contains three cells: the ſeeds are numerous and ſmall.

Genera mentioned by Plumier.

THE corolla of the male flower is divided into ſix ſegments: the corolla of the female flower is alſo divided into ſix ſegments; there is no pericarpium: the calyx becomes large, round, and inflated, and it's rim is undivided: the ſeed is a nut of an oval figure, ſulcated; and containing only one cell: the ſeed is globoſe.

HIPPOMANES.

HIPPOMANES.

THE male and female flowers are produced distinct on the same plant. The male flower has no corolla: the fruit is a large, globose berry, somewhat umbilicated, and containing only one cell: the seed is round and woody. This genus comprehends the *Mancanella* of Plumier.

CISSAMPELOS.

THE male and female flowers are produced separate on the same plant. The male flower consists of four oval, plane, patent petals: the fruit succeeding the female flower is a round berry, containing a single cell, and in it a single, rugose seed. This genus comprehends the *Coupeba* and *Clematis* species 93. of Plumier.

PLUKNETIA.

THE male and female flowers are produced separately on the same plants. The male flower has no calyx: the corolla is composed of four oval, patent petals; the stamens form a short, pyramidal body. The female flower has no calyx; the corolla is the same as in the male: the germen is quadrangular; the style is filiform, and very long, and declinate: the stigma is peltate and quadrifid; the segments are obtuse and plane, and each is marked in it's middle with a spot.

The fruit is a depressed, quadrangular capsule; the angles carinated. It contains four cells, each of them bivalve: the seeds are single, roundish, compressed, and somewhat acuminate at one end.

HIPPOCRATEA.

THE calyx is a perianthium formed of a single leaf, patent, and lightly divided into five obtuse segments, larger than the corolla: the corolla is monopetalous, oval, truncated at the top, and undivided at the edges: the fruit is a capsule of a depresso-plane figure, patent, semitrifid, with trifid segments, and contains three cells, each of them bivalve; and the valves carinato-compressed: the seeds are oblong, and have a membranaceous ala.

This comprehends the *Coa* of Plumier; the parts seem ill described.

MATHIOLA.

THE calyx is an erect, cylindric, undivided perianthium, short and permanent: the corolla consists of a single, very long petal: the tube is slender, and gradually opens into a limb which is undivided, but it's edge is bent back: the stamens are five subulated filaments, shorter than the corolla: the anthers are simple; the germen is globose, and stands under the receptacle: the style is filiform, and of the length of the corolla; the stigma is thick and obtuse: the fruit is a globose drupe, coronated with the cup, and unilocular: the seed is a globose nut; the kernel is globose.

ACHRAS.

THE calyx is a perianthium, composed of five leaves; they are oval, acuminate, erect, and permanent: the corolla is composed of five oblong, erect, and obversely cordated petals; the germen is oval: the fruit is an oval, quinquelocular berry: the seeds are single, suboval, compressed, smooth, and have a prominent denticle on one side.

This genus comprehends the *Sapota* of Plumier, who says, that the *Sapota* has the same characteristics as the *Anona*; but this deviates greatly from his more particular account of it.

BROSSÆA.

BROSSÆA.

THE calyx is a perianthium, formed of a single leaf, divided into five segments, which terminate in acute, erect points, of the length of the corolla: the corolla is formed of a single petal; it is of a conic figure, the top truncated and undivided: the germen is pentacoccous; the style is subulated, and shorter than the corolla; the stigma is simple: the fruit is a round capsule, divided by five furrows; it contains five cells, and is covered with a large, fleshy, succulent, connivent cup, which afterwards splits at the sides: the seeds are numerous and small.

DURANTA.

THE calyx is a perianthium, formed of a single leaf, divided by five indentings at the extremity; it is erect, acute, permanent, and pregnant with the germen: the corolla is formed of a single petal, and is of the ringent kind: the tube is cylindrical and long; the limb is bilabiate: the upper lip is oval, erect, and hollow; the lower is divided into three parts: the lateral segments are roundish and patent; the lower is again divided into two roundish segments: the fruit is a roundish berry, covered with the cup; it's mouth is obliquely connivent, and it contains one cell: the seeds are four, and of an angular figure.

This genus comprehends the Castorea of Plumier.

HYMENÆA.

THE calyx is a perianthium, formed of a single leaf, unequally divided by five indentings at the edge: the corolla is papilionaceous; the vexillum is large and reflex; the alæ are lanceolated and small; the carina is subulated, longer than the alæ, and ascendent: the germen is oblong; the fruit is a large legumen, of an ovato-oblong figure, obtuse, and unilocular: the seeds are numerous, oval, and surrounded with fibres, and a farinaceous matter.

There is but one known species of this genus, which is described by Plumier, under the name of Cour baril.

XIMENIA.

THE calyx is a perianthium, composed of three leaves, small, cordated in figure, and deciduous: the corolla is formed of a single petal, of a campanulated figure, divided at the edge into three erect, oblong, obtuse segments: the germen is small, and of a suboval figure: the fruit is an oval drupe, containing one cell: the seed is oval, unilocular, and smooth.

FUCHSIA.

THE calyx is an undivided margin, coronating the germen: the corolla consists of a single petal: the tube is clavated; the limb is divided into eight segments, and plane; the segments are acuminate, and alternately lower: the stamina are four filaments, of the length of the tube: the antheræ are didymous and roundish: the germen is oval, and stands under the receptacle; the style is simple, and of the length of the stamina: the stigma is obtuse: the fruit is a roundish berry, marked with four furrows, and containing four cells: the seeds are numerous, oval, and placed in a double series.

THALIA.

T H A L I A.

THE calyx is an ovato-subulatus, univalve spatha: the corolla consists of five ovato-oblong petals, hollowed and undulated at the edge; the two which are nearest the spatha are small and involute, the others are nearly equal, erect, and concave: the germen is oval; the fruit is an oval, unilocular berry: the seed is single, of-foous, and bilocular: the nucleus is slender.

This is the *Cortusa* of Plumier. It seems allied to the *Monandria*, the *Canna*, *Maranta*, and the rest.

R H Æ D E A.

THERE is no calyx: the corolla consists of four vertically ovated petals; they are hollow and patent: the stamina are numerous; the germen is globose: the fruit is oval, small, succulent, and contains only one cell: the seeds are three, of an ovato-oblong figure, large, and only furrowed.

B U C E P H A L O N.

THERE is no calyx, nor any corolla: the fruit is an oval, but somewhat quadrangular, berry, containing one cell: the seed is brittle.

R A N D I A.

THE corolla is monopetalous, and of the hypocrateriform kind: the limb is divided into five segments: the germen is oval; the style is simple: the fruit is an oval, unilocular capsule: the seeds are numerous, cartilaginous, compressed, and surrounded with pulp.

Houston calls this *Randia*; Plukenet has figured it, under the name of a species of *Jasmine*.

M Y R I S T I C A.

THE male and female flowers are separate. The calyx of the female is a perianthium, of an ovato-campanulated figure, and indented in four places at the edge; there is no corolla: the pistil is of a clavated form, and of the length of the calyx: the fruit is a drupe, of a roundish figure: the seed is single, of a roundish figure, lightly fulcated, and surrounded with a compressed, reticulated matter.

This is all we know of the characters of the Nutmeg-tree; it were much to be wished that some persons of knowledge would examine them more carefully on the spot.

M Y R I S T I C A.

The Nutmeg tree.

The root is brachiated and spreading: the trunk thick, and covered with a greyish bark: the tree grows to the size of one of our pear-trees: the leaves are somewhat like those of the bay-tree, but larger, and terminated by a longer point; they have no petioles, and are of a deep green on the upper side, and of a pale or whitish green below; they are very fragrant, when bruised: the flowers are yellowish; the fruit is somewhat like a peach.

It is a native of the Molucca's. The nutmeg is the seed of this fruit, and the mace surrounds it in a reticular manner.

ISCHÆMUM.

THE male and female flowers are separate, but stand near one another. The male is very small, and placed on the glume of the calyx of the female: the calyx of the male-flower is a bivalve, mucous glume, containing only one flower: the corolla is a bivalve, mucous glume, of the size of the proper cup: the stamens are three short, capillary filaments: the anthers are simple. The female flower is larger: its calyx is a bivalve glume, contained within a common glume, with an intorted arista within one of the valves: the corolla is a small, bifidous glume: the germen is oblong; the styles are two, and reflex: the seed is single, and involved in the calyces and corolla.

These are the characters of the *Ischæmum*, or *Schænanthus*, as Scheukzer describes it; but they are obscure, and some of them improbable: this is one of the plants, in which there wants much nicer examination.

Of this genus there is but one known species.

ISCHÆMUM.

Schænanth.

The roots are small, white, oblong, hard, woody, and fibrated: the radical leaves are numerous, four inches long, narrow, grassy, convoluted, and terminate in a sharp, robust point; these are of a pale green, and surround one another, and the stalk at the base: the stalk rises to a foot high; it is round, jointed, but that at considerable distances, and is not hollow, but full of pith, like a rush: the flowers are of a reddish colour, and stand in a spiked form on the top of the stalk, arranged in two series, in the manner of those of dandel: the whole plant is of a fragrant, aromatic smell.

It is a native of Arabia. It has been in some esteem in medicine as a cephalic and deobstruent, but it is not much used at present.

F I N I S.







Dionaea Muscipula

Venus Fly-trap

ADDITIONAL PLANT.

DIONÆA MUSCIPULA.

VENUS FLYTRAP.

See Frontispiece to Vol. II.

THE Sexual Method, and its established Genera, demand that we allow this Plant a distinct place and name: but nature ranks it with the *Rorellas*, and in her method it is still a *Sundew*: a very singular one indeed, but perfectly unalienable from the others.

Whether the Cup be composed of five distinct Leaves, or of one Leaf, deeply divided into five parts; and whether the Style be one, or whether there be five; are matters indeed of importance, where we are to arrange Plants by those lesser parts, which Art has chosen for the subject of her characters: but in the course of Nature, when we perceive the Leaves, the Stalk, the Flowers, the Roots, nay, and the very colours of them all, to agree in one Plant with all the Species of another, we must refer it to the same place where they stand; and only account these lesser variations the marks of difference which it wears in separation from the other Species.

'Twas from the old and excellent John Bartram we first had knowledge of the *Dionæa*; but its strange powers were never perfectly comprehended till the living Plants came to us.

These powers, as they were first represented, were out of, and beyond the course of Vegetable nature: but things are not always as they at first appear. Men saw Insects caught in the natural traps of these Leaves; and thought the Plant, (inverting Nature's order,) fed on the animal: but farther examination has shewn that the power of the Leaves is like that in the Sensitive Plant; and that the Insects are not suck'd, which are detain'd in them.

The true state of the matter, as it stands now, confirm'd by many trials, is this: The Leaf closes upwards on a touch; and remains clos'd so long as it is irritated by the object caught. A piece of stick laid on the surface, gives it the motion: the two sides rise, and meet: but very soon they open again; and the offending particle falls out. An Insect laid upon the Leaf, is grasp'd more strongly; and is

S A 2

detain'd

detain'd much longer; for every time it moves, there is fresh irritation: and the Leaf never opens till the creature is perfectly at quiet. When it was found that things inanimate would cause the motion, as well as living Insects; the rest might have followed.

The Plant grows to about ten inches high. The Leaves rise only from the Roots and they are singular in shape, as well as nature: their Footstalk has itself the air and aspect of a Leaf; and the real Leaf is plac'd close on its top. These Leaves are of a deep green, tinged with red; and often red entirely: their Surface is covered with ruddy glands; and each Leaf has six weak thorns, three on a side; and round its edge a rim of red hairs; firm, and numerous. When the Leaf closes, the hairs lock into one another; and with the help of these, and of the thorns within, the Insect is kept fast.

The Stalk is slender, and red; it has no Leaves nor Branches.

The Flowers are snow-white, large and elegant, and compos'd each of five hollow'd Petals; each stands on its own Footstalk, with a little Film at the base; and the whole cluster spreads to some breadth.

The Cup of the Flower has five distinct Leaves.

The Filaments within are ten, and it has only a single style, crown'd with a fring'd button.

The number of its Filaments speaks it of the Decandrous Class; and separates it in the artificial methods far from the Sundews; which have only six: and have also five Styles; and a one-leaf'd Cup.

The Capsule is oval, with a bump; and contains many small Seeds.

It grows in the bogs of Pennsylvania and Carolina, and flowers in August.

With us it will live in the open air, on wet ground; but it will not flourish; nor I am afraid remain long. I had many Plants at Baywater, but they are all faded away. I have sent several to Italy, and other places, but all are lost. I am afraid at this time there are very few Plants to be found but in its native bogs in America.

I N D E X

[illegible]

I N D E X

[illegible]

I N D E X

[illegible]

Melanophaga

I N D E X

[illegible]

I N D E X

[illegible]

INDEX.

| | Page | | Page | | Page |
|---------------|----------|-----------------|-------|------------------|--------|
| Tetragonochea | 481 | Triopteris | 411 | Ulmaria | 460 |
| Tetracium | 474 | Trifurcatus | 412 | Ulmus | 415 |
| Thalia | 421 | Trifurca | 417 | Uva | 29, 42 |
| Thalidrum | 402 | Triphoretia | 476 | Uniola | 406 |
| Thapsia | 445 | Tricostatum | 426 | Volcanaria | 416 |
| Theca | 479 | Tuber | 41 | Urena | 411 |
| Theligonum | 441 | Tubipora | 42 | Urtica | 402 |
| Thesobroma | 455 | Tubularia | ibid. | Urtica | 85 |
| Thesophylla | 468 | Tulipa | 417 | Urticaria | 402 |
| Thesium | 403 | Tuna | 444 | Urticaria ferrea | 402 |
| Theridion | 404 | Tunica | 428 | Uva Ursi | 425 |
| Thlaspi | 426 | Turnera | 414 | Uvaria | 427 |
| Thuya | 441 | Turritis | 426 | Uvalaria | 374 |
| Thymus | 405 | Tuffago | 427 | Vulvaria | 441 |
| Thymus | 401 | Typha | 421 | | |
| Thyridium | 429 | Typhoides | 427 | | |
| Tilia | 478 | | | W | |
| Tilia | 412 | | | Waltheria | 428 |
| Tillandsia | 401 | | | | |
| Tillandsia | 40 | | | X | |
| Tinctoria | 477 | Vaccinium | 401 | Xanthium | 401 |
| Tinctoria | 477 | Valencia | 411 | Xanthemoides | 474 |
| Tithymalus | 410 | Valeriana | 417 | Xanthemum | 474 |
| Toluides | 410 | Valerianella | ibid. | Ximaria | 402 |
| Tonens | 410 | Valerianellodes | ibid. | Xiphium | 402 |
| Tordylium | 424 | Valerianoides | ibid. | Xylaria | 42 |
| Torneoilla | 424 | Vallifera | 417 | Xylem | 474 |
| Torneofolia | 460, 411 | Vanilla | 401 | | |
| Torneodendron | 410 | Vateria | 477 | Y | |
| Tonina | 407 | Vella | 411 | Yucca | 474 |
| Trachelium | 477 | Vernum | 411 | | |
| Tradescantia | 404 | Verbascum | 470 | Z | |
| Trigonostema | 449 | Verbena | 411 | Zacnha | 401 |
| Triglochin | 401 | Verbelia | 411 | Zasichella | 401 |
| Triglochin | 401 | Vernia | 411 | Zanaria | 401 |
| Triglochin | 401 | Vernicia | 411 | Zea | 401 |
| Triglochin | 401 | Viburnum | 411 | Zinnia | 401 |
| Triglochin | 401 | Vicia | 411 | Zizania | 401 |
| Triglochin | 401 | Vinea | 411 | Ziziphium | 401 |
| Triglochin | 401 | Viola | 411 | Ziziphus | 401 |
| Triglochin | 401 | Vilago | 411 | Zoffia | 401 |
| Triglochin | 401 | Vikum | 411 | Zygophyllum | 401 |
| Triglochin | 401 | Vitex | 411 | | |
| Triglochin | 401 | Vitellia | 411 | | |
| Triglochin | 401 | Vicia | 411 | | |
| Triglochin | 401 | Ulex | 411 | | |

F I N I S.



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